

FLIGHT

&
The AIRCRAFT
ENGINEER.

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

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Index and Title Page for Vol. IX.

The 8-page Index for Vol. IX of "FLIGHT" (January to December, 1917) is now ready, and can be obtained from the Publishers, 36, Great Queen Street, Kingsway, W.C. 2. Price 8d. per copy, post free.

SPECIAL NOTICE.

EASTER HOLIDAYS.—Owing to the fact that Good Friday falls in next week, it is necessary for the next issue of "FLIGHT" to go to press on Monday, March 25th. All copy, Editorial or Advertisement, must therefore be at the Office, 36, Great Queen Street, Kingsway, W.C. 2, not later than first post on Monday Morning.

EDITORIAL COMMENT.

"Newspapers are an essential part of our war organisation."—
(Sir Auckland Geddes, Minister of National Service.)



It seems to us that even now a great many people, both in and out of the Services, are acting as though there was really no shortage of petrol—that there was ample and to waste. Constantly we hear of cases where the most appalling waste is rife, where petrol is used as though our normal supplies were still coming in and there was no need to worry. We do not intend to mention cases.

The Petrol Shortage.

Indeed, it is only necessary for the reader to carefully study his daily paper and to note the cases which come before the Courts to realise that we are not exaggerating when we describe the waste and illegitimate use as a grave feature of the present position. In the Services, although things are admittedly better than they were, it is notorious that a great deal of waste is still permitted. We

agree that it is a difficult thing to stop. In the R.F.C., the R.N.A.S., and the Mechanical Transport service we have thousands of men having access to great stores of petrol, men who before the war for the most part never dealt with more petrol at a time than would fill the tank of a motor cycle, and it is perhaps only natural that in present circumstances economy is the last thing of which they think. It is not impressed on them with sufficient force that there really is a very serious shortage of petrol in the country. Not only is there a present shortage, but this is bound to become accentuated as consumption goes up, as it will do as our aircraft programme progresses. To meet it the most rigid economy is necessary. Waste of petrol is to-day as criminal as waste of food, and the more that is impressed upon everybody responsible for its use the better.

There is another aspect of the petrol shortage to which we think attention may usefully be called. There is in the country a very large amount of petrol being held by private people who have been deprived of the use of their cars by the Petrol Restriction Orders. As it is, it is of no earthly use to them, and is largely being wasted through ullage and evaporation. In some cases of which we have knowledge the owners of such private stores of petrol have endeavoured to dispose of them, but no one seems to want to purchase. Local motor agents will not look at it, because they cannot profitably re-sell, and there does not appear to be any machinery which can be put into motion to secure it for the use of the country. We understand that although no definite arrangements are working, there is a scheme of the Petrol Committee for taking such stores of petrol off the hands of their owners at threepence per gallon less than the current wholesale price. It is quite

understandable, however, that there has been no particular rush on the part of individual owners to voluntarily submit to this scheme of confiscation, for that is what it amounts to. Clearly, to ask a person to dispose of goods at a substantially less price than he paid for them is to invite him to submit to a sort of blackmail. If the State wants this petrol, then it should pay for it at the proper rate. We do not mean that the possessors should be allowed to make a profit on it, but we certainly are of opinion that they ought not to be asked to submit to a loss. The most businesslike manner for the Government to deal with the matter would be to compel the owners of any greater amount of petrol than a very nominal fixed quantity to declare it to the Petrol Committee. The latter should then arrange to take it over at the price actually paid for it, which could easily be verified by the production of invoices or the sales book of the person from whom it was obtained. It may be objected that the Government purchases its petrol at a much lower figure than it would have to pay to the private car owner, and that it would thus be out of pocket on the deal. That may be so, but the principle is well established that the individual ought not to be asked to bear the whole of a burden which properly belongs to the community. Either this petrol is wanted or it is not. If it is not, there is no more to be said. If it is, then it should be paid for at a rate which will not cause its present—and quite legitimate—holders to make a loss on its surrender to the authorities.

Dismissed Munition Workers.

The question of dismissed war workers, particularly women, is causing some amount of discussion just now. Owing to the lessened demand for certain materials of war it has been found necessary to close down factories and terminate contracts, with the inevitable result that a number of munition workers—about ten thousand, so far, we believe—have been dismissed from their employment. It appears that all possible notice was given, though in some cases this amounted to no more than a week, and as far as could be done measures were taken to find other work for those whose services were no longer needed in their old tasks.

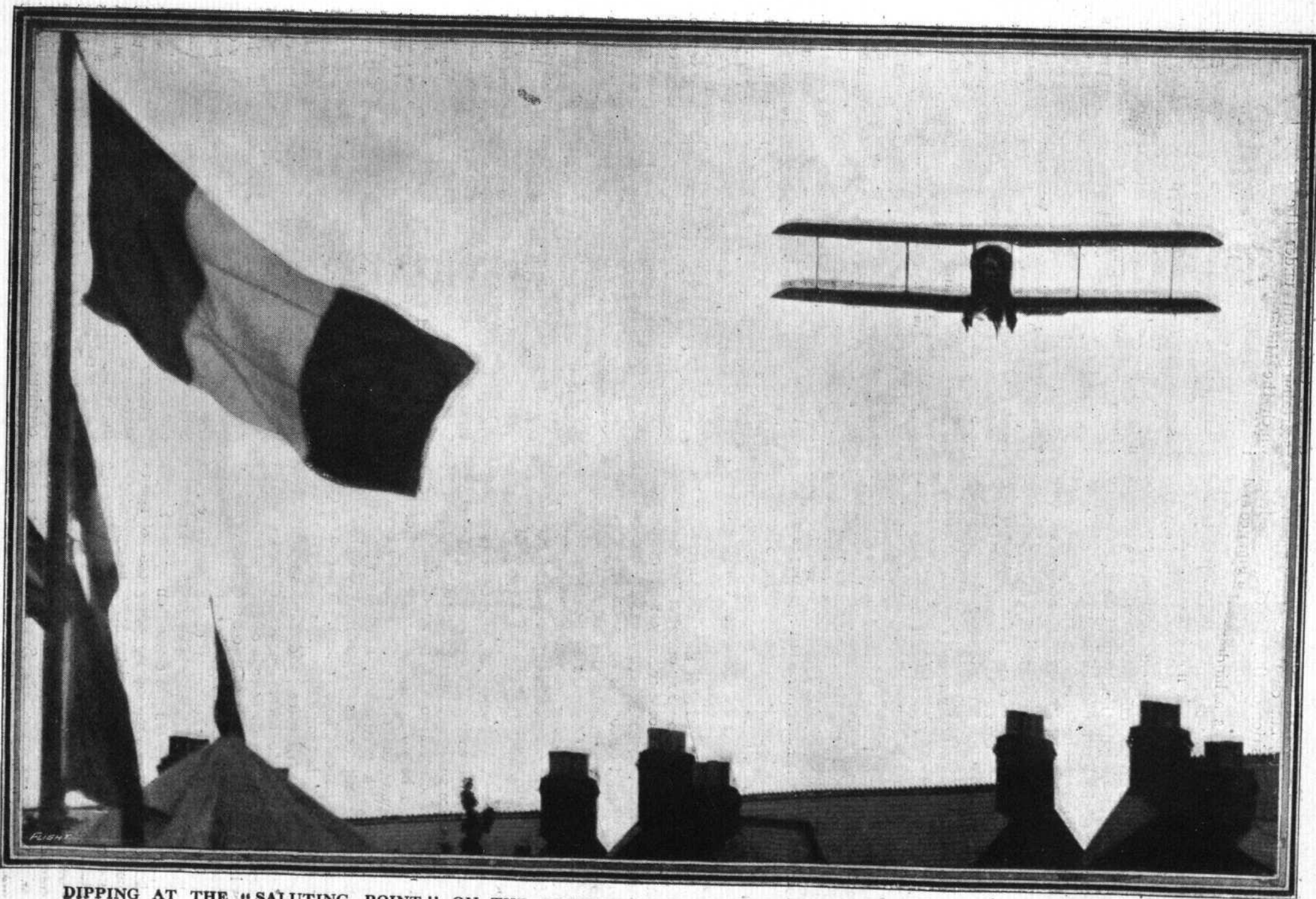
In some quarters these dismissals appear to have been taken as a grievance—quite unnecessarily, as we think. The truth of the matter seems to be that the demobilisation of war labour has begun in certain directions rather earlier than was expected, and, that being so, we fail to see where the grievance lies, more particularly as it is the case that although certain spheres of war industry are being brought to an end, others are taking their places. But even if this were not so, and there were no other war industries open to demobilised workers, it would be as well for everyone concerned to realise at once that war is not the normal state of the country, and that once it is over there will be a general demobilisation of labour war. We agree that the sudden cessation of employment which too many have come to regard as a permanency is disagreeable to those affected, but on the other hand there is to be set against this the fact that most of our war workers and munition makers have, for the past three years, been earning wages that were beyond the wildest dreams of pre-war times, and that if thrift had been practised we should not have had to read of women and girls discharged under the new conditions being absolutely stranded even for the funds to take them back to their homes. It is a very regrettable fact that the munition worker has not, as a rule, practised thrift at all. He, or she as the case may be, has made a great deal of money, and spent it as it has been earned, so that the cessation of war work will come doubly hard on them. However, that is their own look out, and it is scarcely reasonable that the State should be asked to *make work* for them when their services are no longer required in the direction in which they have hitherto been employed. In the case of the women workers who have recently been discharged, it may be pointed out that there is plenty of work for them. Many will be required to fill the vacancies normally occurring in factories, while the “comb-out” of men for the Army will create demand for labour which can only be filled by women. The R.F.C., the “Wrens,” the W.A.A.C. and the Land Army have vacancies amounting in the aggregate to many thousands per month. There is no reason, therefore, to fear that unemployment on a large scale will result from the closing down of a certain number of war contracts which entail the dismissal of a comparatively small number of workers.

WASTEFUL GOVERNMENT METHODS.

THE report of the Select Committee on National Expenditure which has just been presented to the House of Commons is an illuminating document. It throws a lurid light upon the wasteful methods of the Ministry of Munitions, and it is surprising that so little notice has so far been taken of its revelations. It is pointed out at the outset that the Ministry has become a vast regulative establishment administering practically the whole engineering and chemical industries of the country, but remains, as it began, a great buying, and incidentally selling, concern, probably the largest institution of the kind that the world has ever seen. The work is mainly divided among three branches, Supply, Finance and Contracts, but the two last mentioned, in spite of recommendations by the Committee in previous reports, are still relegated to the background. The Supply Officers are all-powerful, and their sole idea is production. While recording their appreciation of the work of the Supply Officers in the early days of the Ministry, the

Committee points out that Supply Officers seem “to have underestimated the importance of the financial aspect. We do not observe sufficient recognition on their part that they stand toward the nation somewhat in the position of trustees who have monies entrusted to their charge, and therefore bear the corresponding obligation of being in a position to show that adequate steps have been taken to safeguard National Expenditure should criticisms be made at any future time. In this connection it must not be forgotten that the Supply Departments are in another form either traders supplying the goods or closely associated with the traders.” It is, of course, recognised that the old elaborate system of tenders and estimates is not suitable for use in war-time, but there is no necessity to fly to the other extreme, simply ordering everything which is indented for, regardless of expense, and leaving the Finance and Contracts Branches to settle the bill at some time in the future.

It is pointed out that Supply should have been glad



DIPPING AT THE "SALUTING POINT" ON THE EDGE OF THE AERODROME.—Mr. H. Sykes on his Martinsyde at Hanworth.

to leave to Finance the troublesome questions of price and accounts, but on the contrary the Committee find a disposition on the part of some at least of the Supply Departments to regard the Finance and Contracts Branches as a hindrance to the prompt carrying out of their work, an attitude which makes neither for efficient work nor economy. Although it is necessary at some time to obtain from the Finance Branch sanction for expenditure, the practice appears to be to put off that formality as long as possible. Not only do the Supply Officers ignore the existence of the Finance and Contracts Branches, but they also do not bother their heads about the work of other Supply Officers. To what this leads is shown by an extract from the Report:—

"One instance which has come to the attention of your Committee indicates how far the opinion of the responsible Officer of the Supply Branch may be accepted as establishing the necessity for a scheme of extension. A company making aeroplane engines obtained permission on the urgent representation of the Supply Branch for the erection, among other things, of a forging shop, costing, with the equipment, some £35,000, of which a great part was to be paid from excess profits. When the building had, it is stated, already been partly erected, it had to be abandoned because the officer controlling the supply of the plant refused to furnish it. Labour and material were so scarce that similar plant erected elsewhere was lying idle. Such cases appear to have been so frequent that it was necessary as late as the 29th November, 1917, to issue a General Memorandum regarding them."

Bearing this in mind, it is not surprising to hear that national factories have been erected and equipped to a value estimated on the latest computation as 66 millions!

It is extraordinary that it should be necessary for a Select Committee to point out that "it is essential that the questions of necessity and of financial sanction should be considered together, and further, that they should be considered as a whole in relation to the whole programme of the Ministry."

The work of the Contracts Branch consists of the fixing of prices, whether for purchase or for sale, and Mr. Winston Churchill on his appointment considered this work so important that he made it into a separate branch. Here again, however, the Supply Officer has his finger in the pie. Although it was perhaps inevitable in the early days of the Ministry that the Supply Officers should have carried their negotiations with manufacturers to the point of fixing prices, there should be no necessity for the practice now. As the Committee point out, the Supply Branch is concerned with production, and the man who is forcing on production is the last man to whom settlement of price should be entrusted. Yet it is noted as "regrettable" that some Departments have repeatedly attempted to settle prices, and there is apparently a tendency for it to become an established practice. This leads the Committee to once again urge that the sole responsibility for fixing prices should be definitely assigned to the Contracts Branch.

Replying to an earlier report of the Committee, the Chancellor of the Exchequer asserted that as negotiations with contractors are carried on by the Supply Branch it has information regarding cost of manufacture. But he was apparently misinformed—as the Committee put it, for "the whole history of the Finance and Contracts Branches of the Ministry in their struggle to reduce prices has lain in the continual effort to obtain information regarding the costs of manufacture which the Supply Branches could not provide." "Further, so far from having costs of the firms with whom they deal, the Supply Branches

do not uniformly assist the Finance Branches in ascertaining them under the compulsory powers which the Ministry possesses. There is a general indifference on their part to the cost of the commodity if only the required production is reached."

Under these circumstances it is not surprising that when costs have been ascertained enormous saving has resulted. Thus on cordite, no less than £3,000,000 has been saved, while experience of costs, &c., in national factories has led to reductions in the prices of gun ammunition amounting to 35 millions in two years. In a case of a contract for gun equipments amounting to 7½ millions a reduction of 2 millions was effected, and in —

"the case of Aircraft Contracts, Accountants' investigations have reduced provisionally accepted tenders amounting to about £7,000,000 by at least £1,000,000; the contracts of one firm alone originally estimated at £1,500,000 being cut down by £225,000. In all these cases the reductions were effected off prices, which were either accepted as reasonable on the information available from the Supply Branches, or were left unsettled precisely because the Supply Branches had no adequate information by which to test them."

Bound up with the question of costs is that of profits, and in this connection the Committee emphasize, the evils of the excess profit taxation scheme. "Now that manufacturers retain a proportion of their profits they are naturally anxious to swell them, and the greater the proportion taken in taxation the greater they will wish the total to be." The Contracts Branch aim at allowing a maximum profit of 10 per cent. on cost, but price is still only arrived at by bargaining, and the ultimate conclusion largely depends upon the urgency of the demand and the sufficiency of the supply. Instances are given of excessive profits made by contractors for Engineering and Chemical products, and the Committee naively state that—

"Something may be learnt inferentially from the consideration of the following instance:—

"Early in 1917 certain shell manufacturers approached the War Office with a proposal to acquire works for the manufacture of aeroplane engine spares. According to their calculation an initial expenditure of about £130,000 on plant and buildings (recognised at the time to be excessive), together with some £30,000 for working capital, would enable them to earn £450,000 in the next 7 months on the basis of the prices then being paid by the War Office for the products which they proposed to manufacture. Of this sum £200,000 would be clear profit. It is quite immaterial for our present purpose that the Contract was not drawn up on this basis, and that when an agreement on another footing had been reached, the contractors failed to fulfil any of their promises of supply. The point of importance is that in the agreement which was made, although it had subsequently to be terminated by the Ministry, the figures given, with their very excessive rate of profit, were accepted as affording a basis of negotiations."

The Committee conclude with a number of recommendations chiefly with a view to strengthening the position of the Finance Branches. Incidentally there is a recommendation that the War Office should release qualified accountants for National Service in the Ministry. It is recommended that the Costing Section of the Aeronautical Supplies Department should be combined with the Contracts Branch.

Having regard to the scope of "FLIGHT," in dealing with this report, the references to aeronautical matters are naturally more the concern of this journal, but it should be noted that there are many instances of profiteering in other branches of the Chemical and Engineering Industries, which more than justify the continuance of the work of this Select Committee, and it is to be hoped that this report will be acted upon.

HONOURS.

Honours for the R.N.A.S.

It was announced in a supplement to the *London Gazette* on March 16th that the King has been pleased to approve of the award of the following honours, decorations, and medals to Officers and Men of the Royal Naval Air Service:—

Bar to the D.S.O.

Squadron Commander E. R. MOON, D.S.O., R.N.A.S.—In recognition of the resource and gallantry displayed by him in the following circumstances:—On January 6th, 1917, whilst on a reconnaissance flight over the Rufiji Delta with Commander the Hon. R. O. B. Bridgeman, D.S.O., R.N., as observer, he was obliged by engine trouble to descend in one of the creeks, where it became necessary to destroy the seaplane to avoid the possibility of its being captured. For three whole days the two officers wandered about the delta in their efforts to avoid capture and to rejoin their ship. During this time they had little or nothing to eat, and were continually obliged to swim across the creeks, the bush on the banks being impenetrable. On the morning of January 7th they constructed a raft of three spars and some latticed window frames. After paddling and drifting on this for the whole of January 7th and 8th, they were finally carried out to sea on the morning of the 9th, when Commander Bridgeman, who was not a strong swimmer, died of exhaustion and exposure. In the late afternoon Flight Commander Moon managed to reach the shore, and was taken prisoner by the Germans. He was released from captivity on November 21st, 1917. He displayed the greatest gallantry in attempting to save the life of his companion.

Distinguished Service Cross.

Flight Commander R. B. MUNDAY, R.N.A.S.—For courage and initiative. Offensive patrols under his able and determined leadership have consistently engaged enemy aircraft, and he has displayed the utmost courage in carrying out special missions alone, both by day and by night. On February 21st, 1918, he attacked a new type enemy two-seater machine. The enemy machine dived steeply east, and Flight Commander Munday followed and closed in, firing a long burst at close range, after which the enemy went down vertically out of control. On other occasions he has brought down enemy machines completely out of control, and has set fire to and destroyed enemy kite balloons both by day and night. On one occasion he attacked an enemy kite balloon at night, and destroyed both the balloon and its shed by fire.

Flight Lieutenant (acting Flight Commander) M. J. G. DAY, R.N.A.S. (since killed).—For great skill and bravery as a fighting pilot. On January 25th he attacked single-handed, six enemy triplanes, one of which he shot down. On February 2nd, 1918, he attacked and destroyed an enemy two-seater machine on reconnaissance at 18,000 ft. He destroyed several enemy machines in a short space of time, and, in addition, had numerous indecisive engagements.

Flight Lieutenant E. E. DEANS, R.N.A.S.—In recognition of great skill and bravery in flying machines of an old type in East Africa. He has carried out some very useful and long flights, and has completed his reconnaissances even when the machine has been practically uncontrollable through "bumps." He has been eager and ready to go up at all times, and has shown no thought of personal danger.

Flight Sub-Lieutenant E. G. JOHNSTONE, R.N.A.S.—For the pluck and determination shown by him in engaging enemy aircraft. On January 19th, 1918, he attacked five Albatros scouts, and engaged one nose on, opening fire at 75 yards range. The enemy aircraft turned on its side and spun. He followed, and engaged again at 30 yards range. The enemy aircraft went down completely out of control. Later in the day, in a general engagement with 14 Albatros scouts, he followed one down to 8,000 ft., firing all the time. This is confirmed by other pilots of the patrol to have fallen completely out of control. On several other occasions he has destroyed enemy machines or brought them down completely out of control.

Bar to the D.S.C.

Flight Commander G. W. PRICE, D.S.C., R.N.A.S.—For consistency and determination in attacking enemy aircraft, often in superior numbers. On January 22nd, 1918, when on offensive patrol, he observed seven Albatros scouts. He dived and fired into one of the enemy aircraft, which stalled, side-slipped, and eventually fell over on its back, disappearing through a thick bank of clouds, and was observed by others of our machines to fall completely out of control. On several other occasions he has destroyed enemy machines or brought them down completely out of control.

Flight Lieutenant (acting Flight Commander) W. A. CURTIS, D.S.C., R.N.A.S.—For continuous skill and courage as a fighting pilot. On January 23rd, 1918, whilst on offensive

patrol, he followed three two-seater enemy machines and an enemy scout through the clouds. The enemy were then joined by five other scouts. He dived and fired into an enemy two-seater from about 40 ft. behind. The enemy machine fell over on its side and started to spin, and was observed by another pilot to break up in the air while spinning down. Since the award of the Distinguished Service Cross this officer has destroyed several enemy machines and driven down others absolutely out of control.

Flight Lieutenant W. L. JORDAN, D.S.C., R.N.A.S.—For skill and determination when leading offensive patrols. On January 6th, 1918, when on offensive patrol, he observed ten Albatros scouts. The enemy dived and spread out, and Flight Lieutenant Jordan, in conjunction with another pilot, attacked one, into which he fired at close range, sending it down in a side-slipping dive. On numerous other occasions he has attacked enemy aircraft with great dash and gallantry, and has destroyed or sent them down out of control.

Second Bar to the D.S.C.

Flight Commander R. J. O. COMPSTON, D.S.C., R.N.A.S.—For ability and determination when leading offensive patrols, in which he displays entire disregard of personal danger. On January 1st, 1918, he observed a new type twin-tailed two-seater enemy machine, which he attacked, firing a good many rounds at point blank range. The enemy machine dived, but was again attacked and went down vertically with his engine full on. The wings came off, and the machine was observed to crash. Later in the day Flight Commander Compston observed two formations of ten and five Albatros scouts respectively. He attacked one of the enemy machines and sent it down in a flat spin and falling over sideways completely out of control. On numerous other occasions Flight Commander Compston has destroyed or driven down enemy machines completely out of control, and has frequently had more than one successful engagement in the same day.

Distinguished Service Medal.

C.P.O. 1st Cl. (now Warrant Officer, 2nd Gr.), W. DICKISON, O.N. 272318 (Ch.) Air-Mech. 2nd Gr., G. H. ROBINSON, O.N. F.26879.

The following officers have been mentioned in despatches:—Wing Commander R. H. MULLOCK, D.S.O., R.N.A.S.; Flight Commander C. E. WOOD, R.N.A.S. (killed).

It was also announced that the following decoration has been conferred by the King of the Hellenes for distinguished services rendered during the war.

Order of the Redeemer. *Commander.*

Capt. F. R. SCARLETT, D.S.O., R.N.

Corrections.

In *Gazette* of February 22nd, under Decorations conferred by the King of the Belgians, for Order of the Crown—Commander, read Order of the Crown—Chevalier, and for Flight Lieut. E. J. K. Buckley, R.N.A.S. (since killed), read Flight Sub-Lieut. E. J. K. Buckley, R.N.A.S. (since killed).

"Mentioned in Despatches."

IN the list of names mentioned for distinguished and gallant services and devotion to duty by the late Lieut.-Gen. Sir Stanley Maude, K.C.B., Commanding-in-Chief, Mesopotamia Expeditionary Force, in his despatch dated November 2nd, 1917, and published in the *London Gazette* on March 13th, the following are included:

Staff and Headquarters.

Lieut.-Col. Gordon, R.F.C., C.I.E., Ind. Army.

Royal Flying Corps.

Lieut. (temp. Capt.) L. J. Bayly, R.A.; Lieut. (temp. Capt.) V. Buxton (Capt., Leic. R.); Capt. (temp. Major) H. de Havilland, D.S.O. (Spec. Res.); Lieut. (temp. Capt.) P. L. Hunting, Northumberland Fus. (T.F.); Temp. Capt. L. M. Lilley; Temp. Lieut. R. K. Morris, Gen. List; Capt. W. H. L. O'Neill, Sikhs, Ind. Army; 2nd Lieut. L. S. M. Page, E. Kent Yeo.; Lieut. A. E. L. Skinner, Norf. Yeo.; Bt. Maj. (temp. Lieut.-Col.) J. E. Tennant, M.C., S. Gds.; Temp. 2nd Lieut. A. E. Young.

No. 36678 2nd Class Air-Mech. J. Cagliari; No. 3834 Sergt. F. W. Curtis; No. 5551 1st Class Air-Mech. F. Kiel; No. 35507 Corpl. F. E. Smith.

Belgian Honours for the R.F.C.

It was announced in the *London Gazette* on March 11th that the following decorations have been awarded by the King of the Belgians for distinguished services rendered during the course of the campaign. The King has given unrestricted permission to wear the decorations in question.

Croix de Guerre.

Lieut. (Temp. Maj.) J. E. A. Baldwin, Hrs. and R.F.C.
Major J. L. Baird, C.M.G., D.S.O., M.P., Yeo., Temp. Capt.
N. A. Bolton, Spec. List and R.F.C., Lieut. (Temp. Capt.)
C. M. B. Chapman, M.C., E. Kent and R.F.C., Lieut. (Temp.
Capt.) J. M. Child, Manch. and R.F.C., Temp. Capt. S.
Cockerell, Gen. List and R.F.C., Temp. Capt. J. H. O. Jones,
Spec. List and R.F.C., Lieut. (Temp. Maj.) J. C. Russell, R.E.
and R.F.C., Lieut. (Temp. Capt.) J. C. Slessor, M.C., R.F.C.
(S.R.), 2nd Lieut. (Temp. Maj.) L. A. Tilney, M.C., R.H. Gds.
and R.F.C., Major-General Sir H. M. Trenchard, K.C.B.,
D.S.O., Lieut. F. Tymms, M.C., S. Lancs. and R.F.C., Temp.
Capt. W. A. Wright, Gen. List and R.F.C.

M.Ms. for the R.F.C.

It was announced in a supplement to the *London Gazette* on March 13th that the King has been pleased to approve of the award of the Military Medal for bravery in the Field to the following:—

2761 Sergt. J. H. Dollittle, R.F.C., 49424 2nd Air-Mech.
H. H. Edmunds, R.F.C., 87595 1st Air-Mech. H. Else, R.F.C.,
3721 Corpl. W. Gundry, R.F.C., 40277 1st Air-Mech. W.
Hargreaves, R.F.C., 3574 Sergt. (Flight Sergt.) W. Heggie,
R.F.C., 22629 2nd Air-Mech. G. O. Leeding, R.F.C., 17116
1st Air-Mech. J. Leyland, R.F.C., 23611 1st Air-Mech. F. G.
Smyth, R.F.C., Aus. 8054 1st Air-Mech. W. B. Campbell,
Aus. F.C., Aus. 120 Sergt. B. F. Jones, Aus. F.C., Aus. 20
Sergt. R. Lonsdale, Aus. F.C., Aus. 1750 1st Air-Mech. H. S.
Raphael, Aus. F.C.

"Mentioned in Despatches."

It was announced by the War Office on March 13th that the names of the following have been brought to the notice of the Secretary of State for War for valuable services rendered in connection with the war, and when applicable an entry will be made in the records of service of officers and other ranks:—

Capt. (Temp. Major) G. G. Adeley, R. Ir. Rif., and R.F.C.,
Capt. L. P. Aizlewood, M.C., Yorks. and Lancs. (T.F.) and R.F.C.
Temp. Lieut. W. R. P. Allen, Gen. List and R.F.C., Temp.
Lieut. C. H. T. Alston, Gen. List and R.F.C., Capt. A. J. G.
Anderson, Lond. R. and R.F.C., Lieut. (Temp. Capt.) H. F.
Anns, Lond. R. and R.F.C., Temp. Lieut. J. A. Atkinson,
Gen. List and R.F.C., 2nd Lieut. (Temp. Capt.) L. Auker,
R.F.C., Quartermaster and Hon. Lieut. (Temp. Capt.) W. E.
Alywyn, R.F.C., Temp. Capt. F. J. Baker, R.F.C., Lieut.
(Temp. Major) R. Balcombe-Brown, M.C., R.F.A., Spec. Res.
and R.F.C., Temp. Capt. J. H. Banks, R.F.C., Capt.
H. C. Barber, Gen. List and R.F.C., Temp. Lieut.
A. W. Barnett, R.F.C., Lieut. (Temp. Capt.) C. H.
Bell, R.F.C., Spec. Res., 2nd Lieut. (Temp. Lieut.)
H. G. Bell, R.F.C., Spec. Res., Lieut. T. J. Bell, Gen. List
and R.F.C., 2nd Lieut. (Temp. Capt.) A. D. Bell-Irving, M.C.,
Gordon Highlanders and R.F.C., Capt. (Temp. Lieut.-Col.)
R. Bell-Irving, Can. Local Forces and R.F.C., Temp. Capt.
H. M. Bentley, Gen. List and R.F.C., 2nd Lieut. (Temp. Capt.)
R. W. B. Billingham, R.F.C., Spec. List, Temp. 2nd Lieut.
W. Blackwell, Gen. List and R.F.C., Major (Temp. Col.)
I. M. Bonham-Carter, North'd Fus. and R.F.C., Lieut. (Temp.
Capt.) J. J. Botterill, R.F.C., Spec. Res., Capt. (Temp. Lieut.-
Col.) J. B. Bowen, Pembroke Yeo., and R.F.C., Lieut. J. C.
Briggs, Leic. Regt., and R.F.C., 2nd Lieut. (Temp. Lieut.)
F. D. Brooker, R.F.C., Spec. Res., 2nd Lieut. G. W. A. Brown,
R.F.C., Spec. Res., Temp. Capt. W. J. C. Brown, R.F.C.,
2nd Lieut. (Temp. Capt.) H. A. Browne, R.F.C. Spec. Res.,
Lieut. (Temp. Capt.) F. C. Buck, R.F.C., Spec. Res., Temp.
Major N. F. D. Buckeridge, R.F.C., 2nd Lieut. (Temp. Lieut.)
H. C. S. Bullock, R.F.C., Lt. Lieut.-Col. (Temp. Col.) W. E. S.
Burch, R.F.C. (Res. of Officers), Temp. Capt. J. W. Burt,
R.F.C., Lieut. (Temp. Capt.) H. J. Butler, R.F.C., Spec. Res.,
Major C. K. Butler-Stoney, R.F.C., T.F. Res., Capt. (Temp.
Major) C. A. J. Butter, Sco. Horse Yeo., and R.F.C.

Temp. Capt. P. R. Callard, Gen. List and R.F.C., Capt.
(Temp. Major) C. D. M. Campbell, R.F.C., Spec. Res., Temp.
Capt. R. G. L. Candy, Gen. List and R.F.C., Temp. Capt.
P. P. Capelli, Gen. List and R.F.C., Lieut. (Temp. Capt.)
R. H. Carr, R.F.C., Spec. Res., Lieut. (Temp. Capt.) W. S.
Caster, M.C., Hunts. Cyc. Battn. and R.F.C., Major J. A.
Chamier, D.S.O., Punjabis and R.F.C., Lieut. (Temp. Major)
H. E. Chaney, Lancs. Fus. and R.F.C. Lt. Lieut.-Col. (Temp.
Brig.-Gen.) L. E. O. Charlton, C.M.G., D.S.O., Lancs. Fus., and
R.F.C., Capt. (Temp. Major) A. C. Clarke, Welsh Regt. and
R.F.C., 2nd Lieutenant J. D. Coales, R.F.C., Spec. Res.,
Major (Temp. Lieut. Col.) D. G. Conner, R.A., and R.F.C.,
Lieut. R. G. Cookson, R.F.C., Capt. (Temp. Major) F. S.
Cresswell, R.F.C., Temp. Capt. H. L. Crichton, Gen. List
and R.F.C., Lieut. (Temp. Capt.) W. N. Cronshaw, E. Lancs.
Regt., and R.F.C., Temp. 2nd Lieut. (Temp. Capt.) W. M.
Cumming, R.F.C., Capt. M. O. Darby, R.F.C., Spec. Res.

Lieut. (Temp. Capt.) S. Davenport, R.F.C., Spec. Res., 2nd
Lieut. (Temp. Capt.) A. C. Day, R.F.C., Spec. Res., Capt.
(Temp. Major) C. Defries, R.F.C., Spec. Res., Capt. H. A. P.
Disney, Camb. R. and R.F.C., 2nd Lieut. (Temp. Capt.)
C. H. Drabble, R.F.C., Spec. Res., Lieut. J. M. Drysdale
R.F.C., Spec. Res., Temp. Capt. Lord G. H. L. Dundas,
R.F.C., (Res. of Officers), Capt. (Temp. Major) H. S. Ebben,
R.F.C., Spec. Res., Temp. Capt. the Hon. W. C. W. Egerton,
R.F.C., Capt. (Temp. Major) A. Ellis, R.E. and R.F.C.,
Temp. 2nd Lieut. D. C. Ellis, Gen. List and R.F.C., Temp.
Capt. W. H. Ewen, Spec. List and R.F.C., Temp. Capt. C. R.
Fleming-Williams, R.F.C., Spec. Res., Quartermaster and Hon.
Capt. (Temp. Lieut.-Col.) A. Fletcher, M.C., R.F.C., Lieut.
A. Forson, R. Sco. Fus. and R.F.C., Lieut. R. C. Gallop, Sco.
Rif. and R.F.C., Capt. (Temp. Major) H. G. Gold, R.F.C.,
Spec. Res., Temp. Lieut., C. P. H. Gunyon, Gen. List and R.F.C.
2nd Lieut. (Temp. Capt.) E. S. Halford, R.F.C. Spec. Res.,
Lieut. (Temp. Major) G. D. Hannay, R.F.C., Spec. Res.,
Temp. Capt. L. G. Harber, R.F.C., Capt. (Temp. Major)
S. H. B. Harris, R.F.C., Spec. Res., 2nd Lieut. (Temp. Lieut.)
A. C. Hartley, R.F.C., Spec. Res., Lieut. (Temp. Major)
A. P. Hartley, Chesh. R. (T.F.) and R.F.C., Capt. (Temp.
Lieut.-Col.) S. A. Hebden, R.F.C., Spec. Res., 2nd Lieut.
(Temp. Capt.) J. N. D. Heenan, R.F.C., Spec. Res., Capt.
and Bt. Major (Temp. Brig.-Gen.) P. L. W. Herbert, Notts
and Derby R. and R.F.C., Lieut. (Temp. Capt.) R. G. Heyn,
R.F.C., Spec. Res., Lieut. (Temp. Major) C. A. Hiatt, M.C.,
Norf. R., and R.F.C., Temp. Capt. A. R. Howard, R.F.C.,
Temp. Major E. J. Howard, R.F.C., 2nd Lieut. (Temp. Capt.)
G. F. Hughes, R.F.C., Spec. Res., Capt. (Temp. Maj.) G. E. W.
Humphrey, R.F.C., Spec. Res., Temp. 2nd Lieut. W. A.
Huntley, R.F.C.

Temp. Lieut. M. O. Illingworth, R.F.C., Capt. (Temp.
Major) C. Jarrott, R.F.C., Spec. Res., Bt.-Major (Temp.
Brig.-Gen.) F. C. Jenkins, R.F.C., Spec. Res., Temp. Lieut.
J. W. Jennings, R.F.C., Lieut. (Temp. Capt.) B. M. Jones,
R.E. (T.F.) and R.F.C., Lieut. W. J. King, N. Staffs. R.
(Temp. Capt. R.F.C.), 2nd Lieut. (Temp. Capt.) A. B. D.
Lang, R.F.C., Spec. Res., Temp. Lieut.-Col. W. H. Lang,
R.F.C., 2nd Lieut. (Temp. Capt.) O. W. Latimer, R.F.C.,
Capt. R. D. Law, W. Yorks R. (T.F.) and R.F.C., 2nd Lieut.
V. A. B. Learoyd, R.F.C., Spec. Res., Capt. (Temp. Lieut.-Col.)
C. F. Lee, W. Som. Yeo. and R.F.C., Temp. Capt. H. E. A.
Lindsay, R.F.C., Major (Temp. Brig.-Gen.) G. Livingstone,
C.M.G., Ldn. R. and R.F.C., Lieut. (Temp. Capt.) G. L.
Lumsden, Can. Local Forces and R.F.C., Qrmr. and Hon.
Capt. (Temp. Capt.) T. Lyons, R.F.C., Qrmr. and Hon. Lieut.
(Temp. Capt.) D. McBirney, R.F.C., Temp. Major A. E. G.
MacCallum, R.F.C., Temp. Major A. H. S. McCallum, R.F.C.,
Capt. (Temp. Major) B. C. McEwen, R.F.C., Spec. Res.,
Capt. (Temp. Lieut.-Col.) A. H. C. Maclean, R. Scots and
R.F.C., Capt. (Temp. Major) G. L. Main, R.F.C., Spec. Res.,
Temp. Capt. H. Marsh, R.F.C., Capt. (Temp. Lieut.-Col.)
R. B. Martyn, M.C., Wilts R. and R.F.C., Lieut. (Temp.
Capt.) H. K. Maxwell, R.F.C., Spec. Res., Temp. Lieut.
W. D. Miller, R.F.C., 2nd Lieut. (Temp. Major) R. H. Mounsey,
Hamps. R. and R.F.C., 2nd Lieut. (Temp. Lieut.) F. Murphy,
R.F.C., Spec. Res., Capt. A. A. Nathan, Herts. Yeo. and R.F.C.
2nd Lieut. (Temp. Capt.) C. G. Nevatt, R.F.C., Spec. Res.,
Temp. Capt. H. J. Newton-Clare, R.F.C., Capt. (Temp.
Lieut.-Col.) F. A. G. Noel, R.F.C., Spec. Res., Capt. (Temp.
Major) C. P. Ogden, R.F.C., Spec. Res., Lieut. (Temp. Major)
H. McD. O'Malley, R.F.C., Spec. Res., Temp. Major A. H.
Parker, M.C., R.F.C., 2nd Lieut. (Temp. Major) S. E. Parker,
R.F.C., Qrmr. and Hon. Lieut. (Temp. Major) J. E. Parkin,
R.F.C., Lieut. (Temp. Capt.) W. M. Pethyridge, R.F.C., Spec.
Res., Lieut. (Temp. Capt.) G. Philippi, M.C., Dns. and R.F.C.,
Temp. Capt. D. G. Pidgeon, R.F.C., Spec. Res., Capt. C. E.
Prince, West'd. and Cumb'd. Yeo. and R.F.C., Lieut. G.
Purvis-Russell-Balfour-Kinnear, R.F.C., Spec. Res.

Capt. (Temp. Major) G. J. Read, N. Staffs. R. and R.F.C.,
Capt. (Temp. Major) V. O. Rees, Lond. R. and R.F.C., 2nd
Lieut. (Temp. Lieut.) J. S. Reid, R.F.C., Spec. Res., 2nd
Lieut. (Temp. Capt.) E. E. Robb, R.F.C., Spec. Res., Temp.
Capt. J. Romanes, R.F.C., 2nd Lieut. (Temp. Major) R. S.
Rumbold, Som. L. I. and R.F.C., Qrmr. and Hon. Lieut.
(Temp. Major) W. J. Ryan, R.F.C., Lieut. (Temp. Capt.)
T. M. Scott, R.F.C., Spec. Res., Temp. Capt. L. G. T. Sedgwick,
Gen. List and R.F.C., Temp. Capt. F. C. O. Shaw, Gen. List
and R.F.C., Lieut. (Temp. Capt.) M. Skitt, R.F.A., Spec.
Res. and R.F.C., Temp. 2nd Lieut. R. J. Sladden, Gen. List
and R.F.C., Capt. (Temp. Lieut.-Col.) R. G. D. Small, Leins.
R. and R.F.C., Temp. Capt. H. G. Smart, Gen. List and R.F.C.,
Major (Temp. Lieut.-Col.) S. E. Smith, Glos. R. (T.F.) and
R.F.C., Temp. Lieut. J. G. Spencer, Gen. List and R.F.C.,
Lieut. (Temp. Major) J. T. Spittle, R.F.C., Spec. Res., Temp.
Capt. G. E. Stagg, Gen. List and R.F.C., Capt. (Temp. Lieut.-



Col.) W. E. G. Statter, R. Lanc. R. and R.F.C., Capt. F. Steel, Essex R. and R.F.C., Lieut. (Temp. Major) E. Stokes, R.F.C., Spec. Res., Lieut. J. A. Stone, Gen. List and R.F.C., Capt. and Bt. Lieut.-Col. (Temp. Brig.-Gen.) F. M. Sykes, C.M.G. Hrs., 2nd Lieut. (Temp. Capt. L. E. Taylor, R.F.C., Capt. R. W. Thomas, Lond. R. and R.F.C., Lieut. R. H. Timmis, R.F.C., Spec. Res., Temp. Capt. H. T. Tizard, Gen. List and R.F.C., Temp. Major E. G. Toye, R.F.C., Spec. Res., Lieut. J. D. Troup, R.F.C., Spec. Res., Temp. Major I. U. D. Truman, Gen. List and R.F.C., Temp. Lieut. T. B. Tully, Gen. List and R.F.C., Capt. (Temp. Major) L. W. F. Turner, R.F.C., Spec. Res., Qrmr. and Hon. Lieut. F. H. Unwin, R.F.C., 2nd Lieut. (Temp. Major) H. R. Vagg, Som. L. I. R.F.C., Temp. Major H. C. Wakefield, Gen. List and R.F.C., 2nd Lieut. (Temp. Lieut.) E. W. Walford, R.F.C., Spec. Res., Major and Bt. Lieut.-Col. W. W. Warner, Ind. Army, ret., Temp. Capt. H. G. Waterall, R.F.C., 2nd Lieut. (Temp. Capt.) H. L. Webb, R.F.C., Spec. Res., Capt. R. Whiddington, R.F.C., and T.F. Res., Temp. Lieut. J. S. Williams, M.C., R.F.C., Temp. Lieut. B. J. Wolfe-Barry, R.F.C., (Temp. Capt. Spec. List), Lieut. A. Wombwell, Linc. R. and R.F.C., Lieut. (Temp. Capt.) T. Worswick, 3572 Sergt. J. Allen, R.F.C., 1791 Flight Sergt. C. I. Antill, R.F.C., 9350 Sergt. C. H. Baldwin, R.F.C., 56421 Temp. Sergt.-Major E. V. Bashford, R.F.C., 1790 Flight Sergt. C. D. Beevor, R.F.C., 26111 Temp. Sergt.-Major W. V. Booker, R.F.C., 51336 Flight Sergt. W. R. Bowmer, R.F.C., 2072 Temp. Sergt.-Major W. Bradley, R.F.C., 8679 Flight Sergt. T. A. Breese, R.F.C., 13014 Flight Sergt. F. G. Brigden, R.F.C., 6954 Sergt. R. W. Brotherston, R.F.C., 29854 Qrmr.-Sergt. H. J. Burns, R.F.C., 45727 Temp. Sergt.-Major N. Byrne, R.F.C., 3706 Temp. Sergt. Major F. Calnan, R.F.C., 7183 Temp. Sergt.-Major G. E. Camp, R.F.C., 5867 Temp. Sergt.-Major D. Campbell, R.F.C., 9321 Sergt. H. B. Chorley, R.F.C., 87949 Temp. Sergt.-Major H. A. Clayton, R.F.C., 2434 Flight Sergt. S. T. Condict, R.F.C., 27770 Sergt. G. A. Conyard, R.F.C., 57017 Corpl. R. Cooper, R.F.C., 859 Temp. Sergt.-Major A. Cordeaux, R.F.C., 6816 Temp. Sergt.-Major H. W. Croft, R.F.C., 44071 Flight Sergt. J. W. Crooks, R.F.C., 40291 Corpl. (Acting Sergt.) W. A. Cross, R.F.C., 28470 Sergt. R. H. Dann, R.F.C., 8513 Sergt. J. Dempsey, R.F.C., 27687 Sergt. G. R. Dexter, R.F.C., S/26483 Sergt. (Acting Staff Sergt.) F. W. Drake, R.F.C., 25051 Temp. Sergt.-Major A. Erskine, R.F.C., 57432 Sergt. W. Frost, R.F.C., 5404 Flight Sergt. T. George, R.F.C., 11839 Temp. Sergt.-Major H. P. Grabaskey, R.F.C., 5025 Sergt. J. H. R. Green, R.F.C., 3839 Temp. Sergt.-Major J. Griffiths, R.F.C., 6581 Corpl. F. Gulliver, R.F.C., 19786 Temp. Sergt.-Major J. H. Harfleet, R.F.C., 16779 Flight Sergt. J. H. Harris, R.F.C., 10465 Temp. Sergt.-Major A. D. R. Hayden, R.F.C., 26067 Corpl. G. H. Heeley, R.F.C., 25012 Temp. Sergt.-Major E. Henderson, 30209 Flight Sergt.

H. C. Hill, R.F.C., 2956 Temp. Sergt.-Major W. Hill, R.F.C., 1273 Temp. Sergt.-Major T. Hodgson, R.F.C., 9725 Temp. Sergt.-Major L. H. Holmes, R.F.C., 485 Temp. Sergt.-Major E. D. Jackson, R.F.C., 15555 Sergt. A. H. James, R.F.C., 2258 Sergt. A. Johnson, R.F.C., 14807 Temp. Sergt.-Major H. Jones, R.F.C., 13723 Corpl. G. C. Kellam, R.F.C., 6558 Flight Sergt. A. F. Kellaway, R.F.C., 5062 Flight Sergt. J. Kerr, R.F.C., 8099 Temp. Sergt.-Major H. Lee, R.F.C., 12190 Flight Sergt. A. Lenney, R.F.C., 399 Flight Sergt. W. St. J. Littlewood, R.F.C., 21338 Flight Sergt. J. Lloyd, R.F.C., 42490 Corpl. T. W. Lomas, R.F.C., 23884 Sergt. L. G. Mace, R.F.C., 3803 Flight Sergt. D. Mackie, R.F.C., 21027 Sergt. W. Magee, R.F.C., 4637 Temp. Sergt.-Major J. Major, R.F.C., 19002 Sergt. H. E. C. Manton, R.F.C., 6561 Flight Sergt. W. Mathews, R.F.C., 18998 Flight Sergt. A. C. Morley, R.F.C., 33244 Flight Sergt. A. Nevill, R.F.C., 27489 Corpl. S. W. Newbold, R.F.C., 45848 Temp. Sergt.-Major R. Newton, R.F.C., 40698 Sergt. J. Nuttall, R.F.C., 1653 Flight Sergt. L. F. T. Pearce, R.F.C., 5377 Sergt. (Acting Flight-Sergt.) W. Pearman, R.F.C., 57555 Quartermaster Sergt. H. W. Pinder, R.F.C., 9605 Temp. Sergt.-Major H. M. Pipar, (now temp. Sec. Lieut., Gen. List) R.F.C., 21033 Flight Sergt. G. E. Polley, R.F.C., 3425 Flight Sergt. H. Pybus, R.F.C., 22239 Sergt. V. B. Ranford, R.F.C., 63701 Sergt. W. H. Read, R.F.C., 61318 Corpl. T. Rees, R.F.C., 350 Flight Sergt. J. G. Richardson, R.F.C., 57582 Sergt. T. J. Richardson, R.F.C., 69753 3rd Air-Mech. R. Roberts, R.F.C., 57588 Flight Sergt. A. Rogers, R.F.C., 46140 Corpl. W. T. Rose, R.F.C., 28267 Sergt. F. V. Russ, R.F.C., 47712 Temp. Sergt.-Major J. M. Saddler, R.F.C., 21153 Sergt. R. Saddler, R.F.C., 235 Temp. Sergt.-Major A. E. Scott, R.F.C., 21712 Corpl. H. Sherman, R.F.C., 37726 Corpl. W. Simmons, R.F.C., 21 Temp. Sergt.-Major E. Slade, R.F.C., 2646 Temp. Sergt.-Major A. C. Smith, R.F.C., 6124 Flight Sergt. D. Smith, R.F.C., 11697 Sergt. (Acting Flight Sergt.) F. R. Smith, R.F.C., 26163 Flight Sergt. P. J. Snead, R.F.C., 18327 Flight Sergt. L. J. Spillman, R.F.C., 7701 Quartermaster Sergt. E. W. R. Stapley, R.F.C., 57615 Sergt. S. Starford, R.F.C., 11080 Flight Sergt. W. E. Strong, R.F.C., 3482 Sergt. J. A. Taylor, R.F.C., 7025 Temp. Sergt.-Major W. E. Townsend, R.F.C., 43642 Sergt. A. P. Vandenberg, R.F.C., 2976 Temp. Sergt.-Major A. G. H. Vint, R.F.C., 9030 Flight Sergt. H. Walden, R.F.C., 78674 Temp. Sergt.-Major J. Wannop, R.F.C., 2157 Temp. Sergt.-Major E. C. Watson, R.F.C., 2296 Flight Sergt. L. G. Watts, R.F.C., 8104 Flight Sergt. H. W. Westbrook, R.F.C., 1412 Sergt. G. W. Weston, R.F.C., 1652 Flight Sergt. S. H. Wheatley, R.F.C., 19292 Temp. Sergt. Major A. B. Williams, R.F.C., 6234 Flight Sergt. H. A. Williams, R.F.C., 19111 Sergt. F. Willis, R.F.C., 3854 Sergt. J. Wileson, R.F.C., 26155 Temp. Sergt.-Major J. S. F. Wilson, R.F.C., 1098 Flight Sergt. C. V. Winney, R.F.C., 4258 Sergt. H. W. Woodcock, R.F.C., 3580 Flight Sergt. A. E. Wyatt, R.F.C.



"X" AIRCRAFT RAIDS.

"X 93" Raid (March 13th).

THE Field-Marshal Commanding-in-Chief, Home Forces, issued the following *communiqués* :—

"One or two hostile airships attacked the Yorkshire coast late this evening. A few bombs are reported as having fallen a short distance inland. No reports of casualties or damage are yet to hand. The raid is still in progress."

"Latest reports indicate that three enemy airships crossed the Yorkshire coast between 8.30 and 10 p.m. last night. Of these only one ventured to approach a defended locality, namely Hull, where four bombs were dropped. A house was demolished, and one woman died of shock. The two remaining airships wandered for some hours over remote country districts at great altitudes, unloading their bombs in open country before proceeding out to sea again."

German Version.

"On the night of March 12th one of our naval airship squadrons attacked fortified places and military establishments on the Humber and in Yorkshire with good results. The airships encountered severe artillery fire, which, however, was unable to stop the attack. All our airships returned undamaged. Captain Strasser was again in command."

"X 94" Raid (March 14th).

THE Field-Marshal Commanding-in-Chief, Home Forces, issued the following :—

"March 14th, 10.45 p.m.

"One or two hostile airships attacked the north-east coast soon after 9.30 p.m. About 20 bombs have fallen close to the coast. No reports as to casualties or damage have as yet been received."

"March 15th.

"Only one airship crossed the coast last night and dropped four bombs in Hartlepool. The raider, which was operating at a great altitude, only remained overland for a few minutes, and the remainder of its bombs appear to have fallen into the sea. Six dwelling-houses were demolished and about 30 damaged. The latest police reports state that the following casualties occurred :—Killed : 1 man, 1 woman, 3 children ; total, 5. Injured : 3 men, 1 woman, 5 children ; total, 9."

"March 17th.

"The total casualties caused by the airship raid on Hartlepool on the night of March 13th-14th were :—

	Men.	Women.	Children.	Total.
Killed ..	2	2	4	8
Injured ..	4	9	9	22

German Version.

"Berlin, March 14th.

"In conjunction with a patrol trip over the North Sea one of our naval airships under Commander Dietrich on Wednesday night successfully bombed the harbour and industrial works of Hartlepool. In spite of the enemy's defensive action, which at times was strong, the airship suffered no damage whatever."

AN ALBATROS FIGHTING BIPLANE.

(Continued from page 287.)

As regards lateral control, the general arrangement of this is indicated in diagrammatic form in Fig. 16. From the control lever the direct cable passes over a pulley on the transverse shaft, along through the bottom wing, around another pulley in the wing, and hence to the rear half of the *aileron* crank lever. The return cable runs from the front half of the *aileron* crank lever, around another pulley in the

removed and the main foot bar used. Wire clips are provided, it will be noticed, for accommodating the pilot's heels so as to prevent his feet from slipping off the foot bar.

As in the majority of German machines provision has been made for locking the control lever in any position, either flying level, climbing, or descending. This is accomplished by means of a collar free to

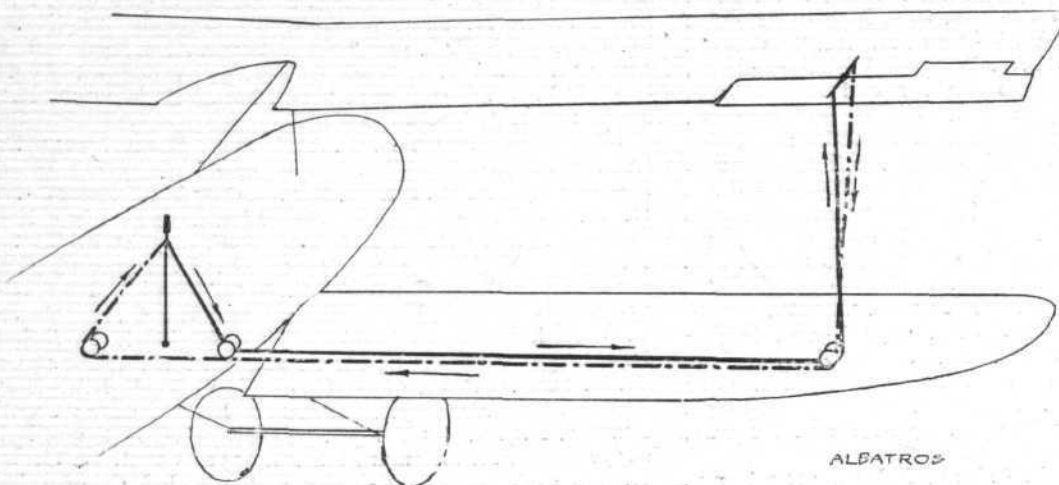


Fig. 16.—Diagram of the aileron control system of the Albatros.

lower wing, through the wing and through the transverse shaft to a pulley on the other side of the control lever, and hence to the screw on the control lever. The details will be clear from Fig. 13.

The foot bar operating the rudder is mounted on a pyramid of steel tubes, and the rudder cables are taken, not, it will be seen, from the foot bar itself as is generally done, but from a short lever projecting forward at right angles to the foot bar. From this lever the cables pass over pulleys and to the cranks on

slide along the control column, but being split and provided with a bolt for tightening up, when the collar is locked in position on the control column. Anchored to this collar by two screws is a fork end, from which a tube runs down and forward to terminate in a ball and socket joint secured to the bottom of the fuselage. This ball and socket joint, it will be seen, enables the control column to be moved freely in any direction, and to allow it to be moved from side to side, even when the forward movement of the column

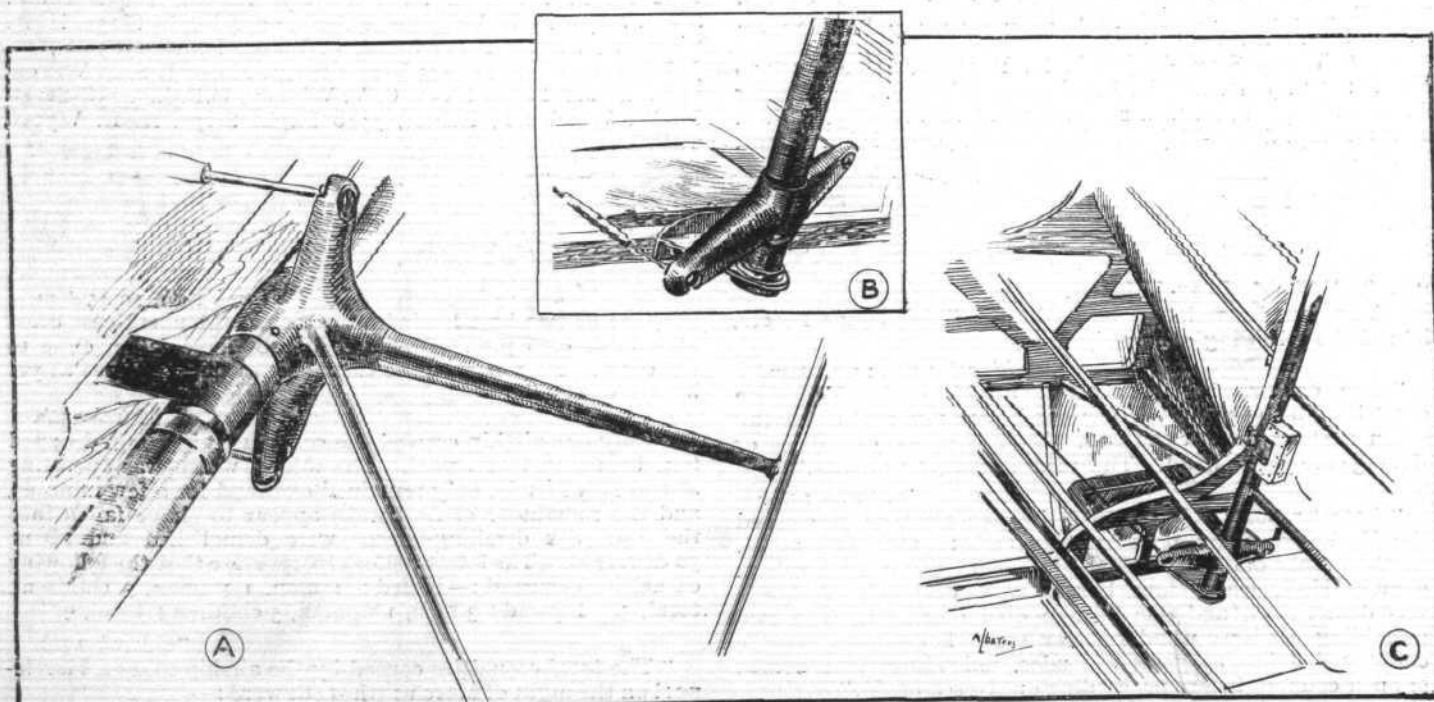


Fig. 17.—The elevator and rudder crank levers on the Albatros biplane. A shows the elevator crank lever with its ball and socket joint for the turnbuckle. In C is shown the mounting of the rudder, and in B the bottom rudder bracket and crank lever.

the rudder. It will be seen that provision has been made for making adjustments of the foot bar to suit pilots of different height by fitting an extra foot bar. If the machine is to be flown by a taller pilot, this is

prevented by locking the collar. In this manner, the pilot can lock the elevator, while operating the control column from side to side for lateral control with his knees.

As far as can be ascertained, although the machine gun was not in place on the machine as exhibited, one synchronised machine gun was fitted, resting on top of the fuselage on the right-hand side. The pilot operated this gun by means of the trigger on the hand-

looks somewhat clumsy, but is apparently quite light, and the strength is probably reasonably good, as the three-ply of which the gun ring is made is made up of different curvatures, each of which tends to strengthen the others.

The machine gun is supported on the gun ring by a swivelling fork, which can be raised and lowered as re-

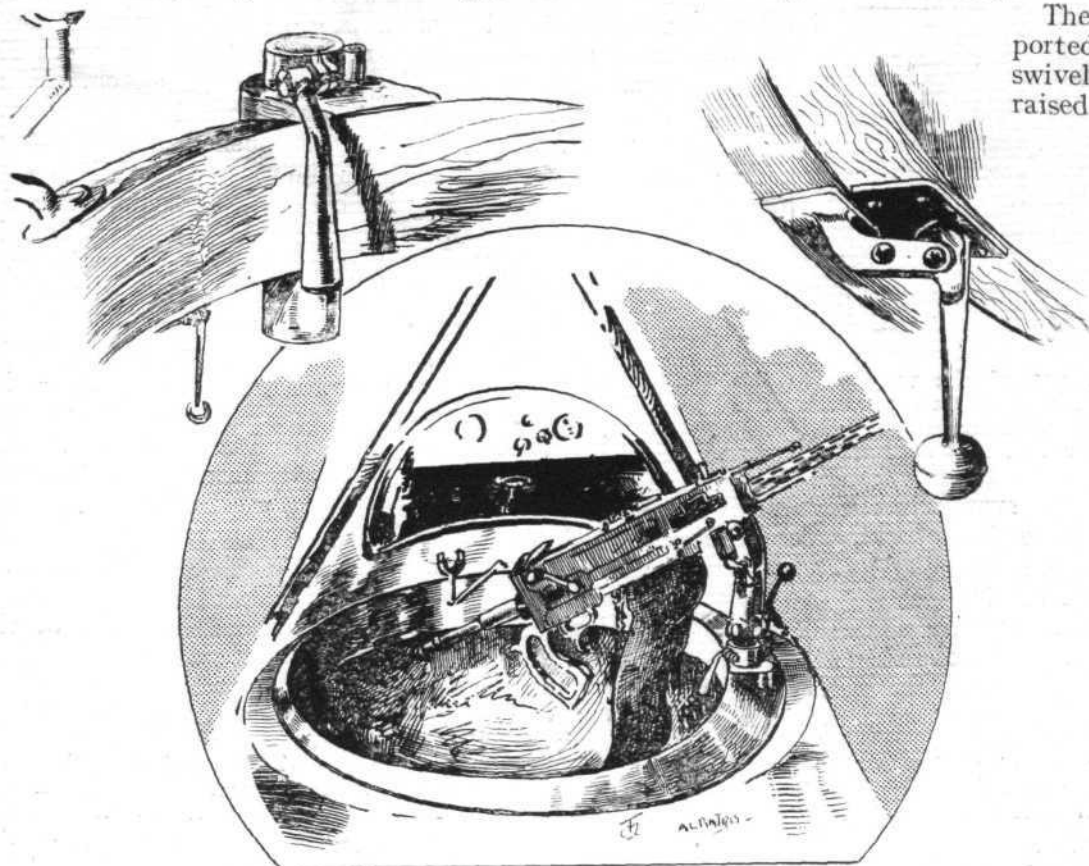


Fig. 18.— The machine gun and its mounting on the Albatros Fighter. The bag for the spent cartridges should be noted. When not in use the butt of the gun rests in the clip shown. The two insets show the locking devices for the gun pivot and gun ring respectively.

grip of his control lever, which is shown inset in Fig. 13.

While on the subject of controls, reference might be made to the crank levers on the elevator and rudder. These are shown in Fig. 17, from which their construction will be evident. The crank lever of the elevator has projecting from it a tapering tube running to the trailing edge of the elevator. The tubular rudder post is working in bearings similar to those described in our last issue when dealing with the hinges for the elevator. At the bottom the rudder tube fits into and is supported by a socket carried on a clip bolted to one of the transverse bulkheads of the fuselage. A peculiarity characteristic of the Albatros is the method of attaching the control cables to the crank levers. A socket is formed in the end of the crank lever, and into this fits a cup-shaped piece of steel machined on one of the bolts of the wire strainers, much in the same manner as the terminal attachment of the main lift cables. Thus any vibration in the control cable is not transmitted to the crank lever, the cup-shaped head of the turnbuckle bolt being free to move in its socket in the crank lever.

Reference has already been made to one part of the armament of the Albatros, namely, the synchronised machine gun operated by the pilot from the trigger on the main control column. In addition there is a movable machine gun mounted on the usual gun ring in the rear cockpit. The general arrangement of this gun mounting is shown in the sketch, Fig. 18. The gun ring itself is built up of thin three-ply wood, and runs on small rollers on its support so as to reduce friction. It is prevented from tilting up by wooden angle pieces screwed to its underside and overlapping the fixed support. The whole arrangement



THE ALBATROS C.V.-TYPE BIPLANE.—The chassis and engine, showing the gearing to the tractor screw.

quired, and which can be locked in any desired position by the locking arrangement indicated in the sketch of the general arrangement. In addition to its circular movement integrally with the gun ring,

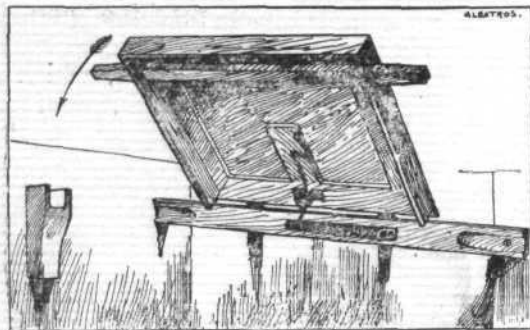


Fig. 19.—So as to be out of the way when the gunner is firing from a standing position, the seat on the Albatros Fighter is hinged and sprung as shown in this sketch.

the machine gun may be swung laterally on its pivot in the gun ring. Here also a locking device is provided in the shape of a split collar locked by an L bolt, as shown in one of the insets. The other inset in Fig. 18 shows the lever by means of which the gun ring is locked in any desired position. A

rocker arm composed of two steel strips is pivoted in its centre on a pillar projecting downwards from the gun ring. At one end this rocker arm carries a plate welded to the two steel strips of the rocker, and at the other it carries the hand lever which is so formed and pivoted as to give an eccentric movement when the lever is swung through an arc. The *modus operandi* will be clear from the sketch. When the gun ring has been swung around to the desired position, the hand lever is pushed down; in so doing the eccentric forces the inner end of the rocker down, thus causing its outer end carrying the flat plate to move up against the fixed support for the gun ring and thereby locking it. A pull on the lever instantly releases the gun ring if it is desired to swing the gun around to another quarter.

As presumably it frequently happens that the gunner wishes to fire from a standing position his seat has been so arranged as to swing into a vertical position as soon as it is relieved of his weight. This is accomplished by means of a spring under the seat, as shown in Fig. 19, which is, we think, self-explanatory. A strip of wood runs transversely under the seat and projects a short distance on either side. These projections rest, when the seat is in a horizontal position, in brackets secured to the sides of the fuselage. (To be continued.)

TWO AGAINST FIVE.

SOME further particulars are now available regarding the fight between two British seaplanes and five enemy seaplanes in the North Sea on March 12th recorded in the following Admiralty communiqué:—

"On March 12th two British seaplanes encountered and attacked five enemy aircraft in the southern part of the North Sea. An engagement took place, which lasted for 30 minutes. One enemy two-seater was shot down and destroyed, the observer of a second machine was killed, and a third seaplane was driven down on the water. The engagement terminated when the British seaplanes had expended all their ammunition. Both machines returned safely."

It appears that this encounter was a sequel to an engagement which had taken place earlier in the day. Just before 9 a.m. three of our seaplanes engaged on patrol duty were attacked near the North Hinder by five German seaplanes, two of which were single-seaters and three two-seaters. Our machines, which were flying close together, were assailed from the rear, and returned the enemy's fire with two of their rear guns. While the fight was in progress an enemy submarine was seen directly ahead of our seaplanes, riding on the surface, with three or four of the crew standing on the conning tower. One of our machines at once swooped down and turned a machine-gun on these men. They promptly disappeared, and the submarine submerged. The aircraft action continued until five British trawlers were sighted, when the enemy immediately broke off the engagement. One of our machines had to "land" shortly afterwards owing to a broken petrol pipe, but all returned safely to their base.

Three hours later, while on patrol duty, two British seaplanes, the crews of which included some who had taken part in the earlier fight, discovered the hostile formation resting on the water. Our machines at once made for the

five enemy seaplanes and opened fire on them. They rose and attempted to fly off in V formation ahead of our machines; but our men, continuing to descend, overhauled the Germans and poured a rapid fire into them. Then the enemy changed formation and manœuvred in circles, apparently in order to gain height. They were closely followed by the British seaplanes, which again and again dived at them. Again the enemy altered their formation to single file ahead, and turned for home.

Our machines by skilful manœuvring broke up their line and compelled them to scatter, and then proceeded to attack them individually. One twin-seater was shot down and sent crashing into the sea. The victor, overtaking a second machine, directed a continuous rapid fire upon her. Her observer was hit and the machine driven down. Meanwhile, the sister British seaplane had been busy with the third German twin-seater. One of the pilots shot the German gunner—he was seen to fall over the side of the fuselage—and the machine dived to the water, unable to take further part in the engagement. As an instance of the coolness of our airmen, it may be mentioned that in the height of the action the wireless operator of our second machine was shot in the neck and collapsed, and one of the pilots and the engineer left their seats, climbed to the wounded man, administered first aid, and then returned to their guns.

Only two enemy scouts were left able to offer any resistance. The chase of these two was continued until, with the exception of two trays for the rear guns, our men had used all their ammunition. On turning for home, the British machines kept up a running fight until the last cartridge was expended. Then the enemy were able to make a course for their base. Both our seaplanes returned safely to theirs, the only casualty being the wireless operator, who was wounded.

"The Royal Air Force."

THE following announcement appeared in the *London Gazette* of March 15th:—

"GEORGE THE FIFTH, by the Grace of God, of the United Kingdom of Great Britain and Ireland, and of the British Dominions beyond the Seas King, Defender of the Faith, To all to whom these Presents shall come, Greeting!

"Whereas by the Air Force (Constitution) Act, 1917, it is enacted that it shall be lawful for Us to raise and maintain a Force, to be called the Air Force, consisting of such numbers of officers, warrant officers, non-commissioned officers and men, as may from time to time be provided by Parliament:

"Now know ye that it is Our Will and Pleasure that the Air Force to be established pursuant to the said Act shall be styled the "Royal Air Force."

"Given at the Court at Saint James', the 7th day of March, 1918, in the Eighth Year of Our Reign.

"By His Majesty's Command,

"ROTHERMERE."

The King at the Clement-Talbot Works.

It was announced in the Court Circular on March 14th, that the King and Queen, attended by the Dowager Countess of Airlie, Lieut.-Colonel Clive Wigram and Major Reginald Seymour, visited the works of Messrs. Clement-Talbot, Ltd., this morning, where their Majesties were received by the chairman (the Earl of Shrewsbury and Talbot), who presented the directors and staff. Major C. S. Paulet (representing the Ministry of Munitions) and Major C. Hirtzel, R.F.C. (representing the Air Ministry), were also in attendance upon the King and Queen.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

ANNUAL GENERAL MEETING.

The Annual General Meeting of the Members of the Royal Aero Club of the United Kingdom will be held on Wednesday, March 27th, 1918, at 6 o'clock, at 3, Clifford Street, London, W. 1.

Agenda.

1. To elect Vice-President and Council for the ensuing year.
2. To announce result of Ballot for Committee.

Committee.

The following Members have been nominated for the Committee:—

Brig.-Gen. The Duke of Atholl, M.V.O., D.S.O.
Maj.-Gen. W. S. Brancker, R.F.A.

Ernest C. Bucknall.
R. O. Cary.
G. B. Cockburn.
C. G. Greenhill.
Henry Knox.
Col. F. Lindsay Lloyd, C.M.G.
Major J. T. C. Moore-Brabazon, R.F.C.
Wing-Commander C. R. Samson, R.N., D.S.O.
A. Mortimer Singer.
T. O. M. Sopwith.

A ballot paper for the election of nine candidates to the Committee of the Club has been issued to the Members.

H. E. PERRIN, Secretary.

3, Clifford Street, New Bond Street, W. 1.

THE ROLL OF HONOUR.

REPORTED by the Admiralty:—

Accidentally Killed.

Prob. Flight Officer R. Dobson, R.N.
Prob. Flight Officer W. J. Stevens, R.N.

Previously Missing (believed Drowned), now presumed Drowned.

Flight Sub-Lieut. R. G. MacAloney, R.N.

Died of Injuries.

Prob. Flight Officer A. W. G. Crosby, R.N.
Prob. Flight Officer B. H. Whiting, R.N.

Died of Injuries Accidentally Sustained.

F33078 Acting Air-Mech. 1st grade, F. A. Smith, R.N.A.S.

Seriously Wounded.

Flight Sub-Lieut. A. M. Bannatyne, R.N.

Wounded.

Flight Sub-Lieut. B. R. Carter, R.N.

Accidentally Injured.

Flight Sub-Lieut. F. J. H. Bacon, R.N.
Prob. Flight Officer H. J. Clark, R.N.
Flight Lieut. D. F. Ellis, R.N.
Lieut. A. V. James, R.N.R.
Prob. Flight Officer J. H. Knight, R.N.
Prob. Flight Officer F. B. Shaw, R.N.

Missing.

Flight Sub-Lieut. K. D. Campbell, R.N.
Flight Sub-Lieut. H. R. Casgrain, R.N.

Reported by the War Office:—

Killed.

2nd Lieut. L. E. Atha, R.F.C.
2nd Lieut. D. M. Clements, R.F.C.
2nd Lieut. W. F. Hargreaves, R.F.C.
Lieut. H. W. M. Mackay, Gordon H., attd. R.F.C.
Lieut. J. H. Morris, R.H.A., attd. R.F.C.
2nd Lieut. M. H. Orcutt, R.F.C.

Previously Missing, now reported Killed.

Capt. J. S. Campbell, A. and S. H., attd. R.F.C.
2nd Lieut. A. W. Edwards, R.F.C.
2nd Lieut. R. P. Hood, R.F.C.
2nd Lieut. W. W. Hutton, Lond. Regt., attd. R.F.C.
Lieut. W. J. Potts, M.C., R.F.A., attd. R.F.C.

Died of Wounds.

2nd Lieut. R. S. Fear, Worc. R., attd. R.F.C.
2nd Lieut. L. N. Gaskell, R.F.C.

Previously Missing, now reported Died as Prisoner in Turkish hands.

Capt. J. R. Philpott, M.C., R.F.C.

Previously Missing, believed Drowned, now reported Drowned.

90142 3rd Air-Mech. J. A. Hunt, R.F.C.

Accidentally Killed.

Lieut. T. S. O. Dealy, Austr. F.C.
121198 3rd Air-Mech. M. Brooks, R.F.C.

Died.

105890 3rd Air-Mech. J. Paterson, R.F.C.
77347 2nd Air-Mech. L. R. Pearce, R.F.C.

Wounded.

2nd Lieut. W. H. Boston, R.F.C.
Lieut. T. W. Cave, R.F.A., attd. R.F.C.
2nd Lieut. A. J. S. Doble, R.F.C.
Lieut. M. D. G. Drummond, R.F.C.
2nd Lieut. L. N. Jones, R.F.C.
2nd Lieut. S. Jones, R.F.C.
2nd Lieut. L. A. Herbert, R.F.C.
Lieut. L. McRitchie, New Bruns., attd. R.F.C.
Lieut. N. G. Morris, R.F.A., attd. R.F.C.
Lieut. L. V. Southwell, Sask., attd. R.F.C.
Major E. C. Stonehouse, A.S.C., attd. R.F.C.
2nd Lieut. C. P. Virgo, R.F.C.
61183 1st Air-Mech. F. Ayres, R.F.C.
54980 3rd Air-Mech. J. Dunn, R.F.C.
8361 1st Air-Mech. W. G. Hodges, M.M., R.F.C.
65712 2nd Air-Mech. I. Williams, R.F.C.

Missing.

Lieut. R. E. Duke, R.F.C.
Lieut. A. C. Gilmour, Manit., attd. R.F.C.
Capt. W. L. Haight, W. Ont. and R.F.C.
Lieut. H. L. W. Hancock, R.F.C.
Capt. K. B. Montgomery, M.C., R.F.C.
2nd Lieut. W. F. Poulter, R.F.C.
2nd Lieut. A. B. Reade, R.F.C.
2nd Lieut. L. D. Sisley, R.F.C.
2nd Lieut. A. P. C. Wigan, R.F.C.
107299 1st Air-Mech. L. J. W. Bain, R.F.C.
20798 2nd Air-Mech. A. Paterson, R.F.C.

Previously Missing, now reported Prisoners in German hands.

2nd Lieut. A. G. D. Alderson, Worc. R., attd. R.F.C.
2nd Lieut. A. C. Ball, Sher. For., attd. R.F.C.
Lieut. J. O. Beattie, B.C. Regt., attd. R.F.C.
2nd Lieut. H. S. Clemons, A.S.C., attd. R.F.C.
2nd Lieut. E. O. Cudmore, R.F.C.
Lieut. E. G. Green, M.C., R.E., attd. R.F.C.
2nd Lieut. H. A. Hewitt, R.F.C.
Lieut. K. M. Rodger, A. and S. Hrs., attd. R.F.C.
Lieut. W. Ross, R. Welsh F., attd. R.F.C.
2nd Lieut. O. B. Swart, R.F.C.

Previously Missing, now reported Prisoner in Austrian hands.

2nd Lieut. F. D. C. Gore, R.F.C.

A Fatal Accident.

CAPTAIN C. LEY, R.F.C., was killed near Croydon Town Hall on the afternoon of the 16th. His machine struck the chimney stack of a villa in Woodstock Road and was wrecked.

Home from Germany.

THE following officer, who was a prisoner of war in Germany, is reported as having passed through Switzerland en route for England:—

Lieut. W. REID, Liverpool R., attached R.F.C.

THE NEW AIR FORCE.

LAST week we gave the memorandum explaining the constitution of the new Air Force, and we now print some of the appendices.

APPENDIX IA.—Pay of Officers.

1. The rates of pay (and classification for allowances) of officers of the Air Force are as shown in the following table :—

Classification for Allowances (see App. III).	Rank.	Staff on Air Force Commands. Yearly Rates (Consolidated).*	Flying Branch. Daily Rates.		Technical Branch. Daily Rates.		Administrative Branch.† Daily Rates.
			Basic.	Flying.	Basic.	Technical.	
1-2	General	£ 2,500	—	—	—	—	—
	Lieutenant-General ..	2,000	—	—	—	—	—
3	Major-General	1,500	—	—	—	—	—
4	Brigadier-General ..	1,000	—	—	—	—	—
5-6	Colonel	900	—	—	—	—	35s.
8	Lieutenant-Colonel ..	750	40s.	—	(Class A, 40s.) (Class B, 35s.)	—	24s.
10	Major	550	32s.	—	24s.	—	21s. 4d.
12	Captain	500	—	—	—	—	—
		400	19s.	8s.	17s.	2s., 4s., or 6s.	15s. 6d.
			After 1 year's service in the rank, 20s.		1s. additional for each completed year's service in the rank up to a maximum of 20s.		17s. 6d. after 3 years' service in the rank, subject to 12 years' total service.
14	Lieutenant	350	12s.	8s.	12s.	2s., 4s. or 6s.	11s. 6d.
		300	1s. additional for each completed year's service in the rank, up to a maximum of 16s.		1s. additional for each completed year's service in the rank, up to a maximum of 16s.		
		250					
14	Second Lieutenant ..	—	10s.	8s.†	10s.	2s. or 4s.	10s. 6d.
14	Probationers	—	7s. 6d.	4s.	7s. 6d.	Nil.	7s. 6d.

* These rates are subject to deductions when the officer is provided with public quarters.

† Including Instructional Officers, non-flying and non-technical.

‡ Subject to graduation as Pilot, up to which time 4s. will be drawn.

NOTE.—"Service in the rank" in the above table (in the case of officers joining from the existing services) means service in the appointment; e.g., service in the rank in another arm of the service would not reckon, nor would service given in a Flying Service appointment carrying a lower rank.

2. The rates for Staff Officers are shown as consolidated only, but it may be necessary to arrange that the emoluments of Staff Officers abroad shall be issued in the usual form of ordinary pay and local allowances.

3. Special inclusive rates of pay for certain classes of temporary officers, such as acting paymasters or officers engaged on a commercial basis, continue as hitherto, in respect both of pay and of allowances, unless and until they are given an ordinary Air Force commission with the appropriate rate of pay of the rank.

4. Similarly, existing quartermasters, if transferred, will continue at existing rates, unless appointed to an Air Force rank.

5. Flying pay is not issuable to officers on consolidated rates, but otherwise the regulations governing the issue of flying pay will continue subject to any necessary modifications in detail. Details will be published in Air Force regulations in due course.

6. The existing rights of Reserve officers of the Flying Services to the gratuity of £150 for each year of service will continue, as also will the right of temporary officers of the Army to the gratuity based on length of service under the Pay Warrant.

7. The pay of officers will be issued in arrear. In order to overcome any inconvenience thus caused to army officers now drawing pay in advance, the agents will be authorised to issue to such officers, on application being made, an advance of any gratuity to which they may be entitled under the Pay Warrant on the expiration of their service. The advance will not exceed one month's pay. In the case of officers not entitled to a gratuity as above, the agents will advance one month's pay, on request, for a period not exceeding six months, without interest.

8. The following firms have been appointed Air Force agents for the issue of Pay and Allowances to officers of the Air Force :—

Messrs. Cox and Co., 19, Charing Cross, London, S.W., for Staff and Flying Branch.

Messrs. Holt and Co., 3, Whitehall Place, London, S.W., for Technical and Administrative Branches.

The present practice of issuing the pay of R.N.A.S. officers through Naval Paymasters will cease. Instructions will shortly be issued for general guidance as to the opening of individual accounts with Air Force agents and as to the time and method of giving effect to the change referred to in para. 7.

9. The issue of allotments of pay by the Admiralty on behalf of Naval officers transferred or attached will, of course,

cease. It will be possible for officers to make their own arrangements for such allotments with their agents. Payments in respect of children's allowance will be made through the agents.

10. A certain number of R.F.C. officers performing non-technical administrative duties were graded on appointment or promotion as E.Os. or Park Commanders. Such officers will, under the new régime, be appointed Administrative Officers, and be paid as such, subject to reserved rights to existing rates of pay, if higher.

11. Commissioned warrant officers and warrant officers of the Navy come over as commissioned officers of the Air Force. They are, at present, entitled to (Navy) rates of separation allowance and, in some cases, to store allowance, and as their pay in the Air Force plus officers' children's allowance may be less than their total Naval emoluments, their case will be dealt with as follows :—Where the total Air Force emoluments are more beneficial, they will be drawn. Where they are less beneficial the officers will continue to receive the Navy pay and separation allowances, &c., which they are at present drawing. When for any reason the Air Force emoluments become more beneficial, e.g., on promotion, the Navy emoluments will be finally cancelled.

APPENDIX IIA.—Pay of Men.

1. The Rates of Pay of warrant officers, non-commissioned officers and men of the various branches of the Air Force are as shown in the attached table. Appendices IIB and IIC show the Air Force rank into which the various ranks and ratings of the existing Flying Services will come.

2. Rates of Flying Pay remain as at present :—

First class	4s.
Second-class	2s.
Under instruction	1s.

with special rates for men employed in airships, and kite balloons, on acceptance and observation duties, &c. These special rates will be liable to certain modifications.

3. Increases for War Service.—The increase of 1d. a day for each year of service, given to the Army as "War Pay," is not applicable to the Air Force, as the rates were specially

fixed so as to render such a grant unnecessary. The following classes, however, will be entitled to War Pay, under the conditions already announced for the Army:—

(a) Boys at 1s., privates, 2nd Class, and clerks, 3rd Class.

(b) Men who come over from the R.F.C. at their existing Army rates of pay and who would have been entitled to War Pay under Army regulations. Such men will retain it during the war until it is absorbed by increases for length of service or on promotion. Those coming over on a higher rate of pay may draw their Army pay and War pay if these together would be more beneficial.

It should be noted that service in the Navy or Royal Marines does not count towards War Pay.

4. *Allotments of Pay.*—The recent concessions will apply as follows:—

(a) To men from the Army—as already authorised for men now serving in the Army.

(b) To men from the Navy—the benefit of the Army system will be given. No allotment will be charged against the man's pay in respect of the amounts due as separation allowance or dependants' allowance under Army scales and regulations. As a temporary measure, however, the present allotment will continue to be charged against the men's accounts until the re-assessment is completed; this will take some considerable time: any arrears due to the men in respect of allotments so charged will be made good to them. (See Appendix III, para. 9.)

5. *Men on Special Rates of Pay.*—Following the present practice such men are not entitled to the concessions given under paras. 3 and 4 above—e.g., men of the R.F.C. in Canada drawing a special allowance while serving there.

8. *Permanent Additional Emoluments (Navy).*—In the same way men drawing non-substantive pay, detained pay, re-engaged or extension pay and the like will be entitled to retain their naval rate, including these extras, under Naval Regulations, where the naval total is more beneficial than the Air Force pay. The additional pay will, however, drop out and be cancelled as the men come on to more beneficial rates in the Air Force either on appointment, or on subsequent increase on promotion, &c.

9. *Royal Fleet Reserve.*—The emoluments of these men will follow the rule in para. 8 above. They will draw rates of pay not less than their present pay plus war retainer of 8d. a day, detained pay, &c. Any higher rate which they may reach in the Air Force will be regarded as including the war retainer, &c. These men will also retain any special rights they may have in respect of pension or gratuity in the Navy, subject to their receiving no alternative compensation in virtue of Air Force service.

10. *Miscellaneous Allowances for Special Duty (Navy).*—In the case of allowances such as Library, Schoolmaster's, Physical Training Instructor's, Charge of Victualling Stores, &c., the Air Ministry reserves the right to vary or withdraw any such allowances, although as far as possible present holders will be permitted to retain them on the lines described in para. 8 above, so long as the individuals actually and necessarily perform the duties for which these allowances are given.

11. *Remittances by Postal Order (Navy).*—The facilities hitherto given for this will in future be strictly confined to purchase of postal orders on board His Majesty's ships.

Table of Rates of Pay (and Classification for Allowances) of Warrant Officers, N.C.O's. and Men of the Air Force.
(Referred to in para. 1 above.)

Technical.			Non-Technical.			Clerks, Storekeepers, &c.			Classification for Allowances (see App. III).
Rank.	Daily Rate of Pay.		Rank.	Daily Rate of Pay.		Rank.	Daily Rate of Pay.		
A. Chief master mechanic, 9s. + 3s.	12s.		Sergeant-major, Class I	7s. 6d.		Master clerk ..	6s. 9d.		15
B. Chief mechanic—	11s.		Sergeant-major, Class II	6s. 9d.		Flight clerk ..	5s. 6d.		16
Commencing rate of pay	7s.		Flight-sergeant—						19
After 3 years' service in the rank	8s.		Commencing rate of pay	3s. 10d.					
After 6 years' service in the rank	9s.		After 3 years' service in the rank	4s. 1d.					
C. Sergeant mechanic—			After 6 years' service in the rank	4s. 4d.		Sergeant clerk	4s. 9d.		19
Commencing rate of pay	6s.		Sergeant—						
After 3 years' service in the rank	6s. 6d.		Commencing rate of pay	3s. 3d.					
After 6 years' service in the rank	7s.		After 3 years' service in the rank	3s. 5d.					
D. Corporal mechanic—			After 6 years' service in the rank	3s. 7d.		Corporal clerk	4s.		20
Commencing rate of pay	5s.		Corporal—						
After 3 years' service in the rank	5s. 6d.		Commencing rate of pay	2s. 4d.					
After 6 years' service in the rank	6s.		After 3 years' service in the rank	2s. 6d.					
E. Air mechanic, 1st Class—			Private, 1st Class—			Clerk, 1st Class	3s.		
Commencing rate of pay	4s.		Commencing rate of pay	1s. 8d.					
After 3 years' service in the rank	4s. 6d.		After 3 years' service as a private	2s. 0d.					
After 6 years' service in the rank	5s.		over 18 years of age.			Clerk, 2nd Class	2s.		20
Air mechanic, 2nd Class—			Private, 2nd Class—						
Commencing rate of pay	3s.		Commencing rate of pay	1s. 6d.		Clerk, 3rd Class	1s. 8d.		
After 3 years' service	3s. 6d.								
Air mechanic, 3rd class—						Boy clerk ..	1s.		20
Commencing rate of pay	2s.		Boy—						
F. Boy—			Commencing rate of pay	1s.					
Commencing rate of pay	1s.								

Note.—“Service in the rank” includes services given in the corresponding rank in the Navy and Army in the case of men now to be transferred or attached.

If the existing rate of pay of any man is higher than the rate which he would draw under the above table, he continues to draw that higher rate until it is absorbed by increased pay on promotion or otherwise, unless disrated for other reasons.

6. *Army Gratuities.*—The gratuities given under Army Regulations to soldiers on transfer to the Army Reserve or on discharge will continue to be issuable, and will be extended to men from the R.N.A.S. with effect from the date of joining the Air Force. These gratuities are at the rate of £1 for each year of service. Transfer from the Army to the Air Force is not a “Discharge” for purposes of this gratuity.

7. *Good Conduct Badges and Pay.*—Good Conduct Badges will not be granted in the Air Force. Men who are already in possession of Good Conduct Badges carrying additional pay will be dealt with as follows:—They will be guaranteed a rate of pay not less than the total of the ordinary and Good Conduct Pay now drawn. This rate (with any good conduct pay contained in it) will be cancelled by any higher rate to which the man may be appointed on transfer, or on subsequent promotion, or otherwise.

APPENDIX IID.—Trade Classification in Air Force.

Technical.	Non-Technical.	Clerks and Storemen.
Chief master mechanic.	Sergeant-major, Class I.	Master clerk.
Master mechanic.	Sergeant-major, Class II.	
Chief mechanic.	Flight-sergeant.	Flight clerk.
Sergeant mechanic.	Sergeant.	Sergeant clerk.
Corporal Mechanics and Mechanics.	Corporals and Privates.	Corporal Clerks and Clerks.
Acetylene welder.	Aerial gunner.	Clerk: General, Pay, Short-hand-typist,
Armourer.	Assistant armourer.	
Blacksmith.	Batman.	

APPENDIX IID—continued.

Technical.	Non-Technical.	Clerks, &c.
Boat builder.	Butcher.	Stores.
Camera repairer.	Cook.	Storeman.†
Carpenter.	Coppersmith's mate.	
Coppersmith.	Disciplinarian.	
Draughtsman.	Fabric worker.	
Driver—	Hospital orderly.	
Motor-boat.	Labour.	
Petrol.	Packer's mate.	
Steam.	Painter's mate.	
Electrician.	Motor-cyclist.	
Fitter: Aero engine,	Shoemaker.	
general mechanical	Tailor.	
transport, jig and		
tool makers.	Telephone operator.	
Hydrogen worker.		
Instructor (to be		
described).		

Technical—continued.

Instrument repairer.	Observer.	Tinsmith and sheet
K.B. telephonist.	Packer.	metal worker.
Magneto repairer.	Painter.	Turner.
Millwrights.	Pattern maker.	Upholsterer.
*Miscellaneous.	Photographer.	Vulcaniser.
Motor-body builder.	Pilot.	Winch driver and
Motor-boat cox-	Propeller maker.	fitter.
swain.	Rigger (aeroplane).	Wireless mechanic.
Moulders.	" (airship).	Wireless operator.

† All learners will be entered in the "Non-technical" category and be re-mustered to the "Technical" category when sufficiently qualified to be able to pass the prescribed examination.

* Mechanics mustered under this head to be restricted to a minimum.

† Storehandlers (i.e., storeman employed as labourers only) will be (non-technical) privates.

ANSWERS TO CORRESPONDENTS.

[As a number of letters reach us signed with initials only some of which do not give a complete address, we would point out that such communications cannot be dealt with in our columns. Full name and address, which will not be published, must always be given.—ED.]

J. W. R. (Southampton).—There are technical sections of both air services at the Air Ministry, and you should apply as directed above, stating full particulars of your experience.

E. H. B. (Bolton).—You will be able to get full particulars regarding the A.F.Ae.S. from the Secretary of the Aeronautical Society, 7, Albemarle Street, W.C.

D. R. (Corpl. R.E.).—Strictly speaking a hydroplane does not fly. In the earlier days of aviation, when the idea was first introduced of fitting an aeroplane with floats so as to enable it to start from or alight on water, there was not in existence any term suitably describing such a craft. It therefore became customary when referring to an aeroplane designed for use over the sea, to call it a hydro-aeroplane. This term being somewhat cumbersome, it was not long before the word hydroplane was generally—although erroneously—used to designate what is now properly termed a seaplane. A hydroplane is, correctly speaking, a motor boat designed to travel at high speed on the surface of the water. The greater the speed the smaller the portion of the hull immersed in the water, but the craft does not actually leave the water.

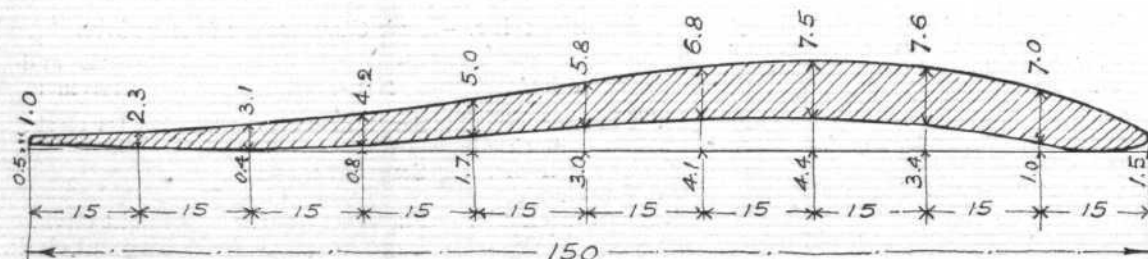
H. M. (Anglesey).—We regret that we have not the space for publishing tables of standard screw threads. Any engineer's pocket-book will furnish you with full information regarding them.

G. M. (Eton).—The dimensions of the wing section E1fe 32 are as follows:—

Distance from leading edge in terms of chord.—

	0	.1	.2	.3	.4	.5
Upper ....	.10	.047	.051	.050	.045	.039
Lower ....	.01	.007	.023	.029	.027	.020
	.6	.7	.8	.9	1	
Upper ....	.033	.028	.021	.015	.001	
Lower ....	.011	.005	.003	0	.003	

The camber is expressed in terms of chord. The accompany-

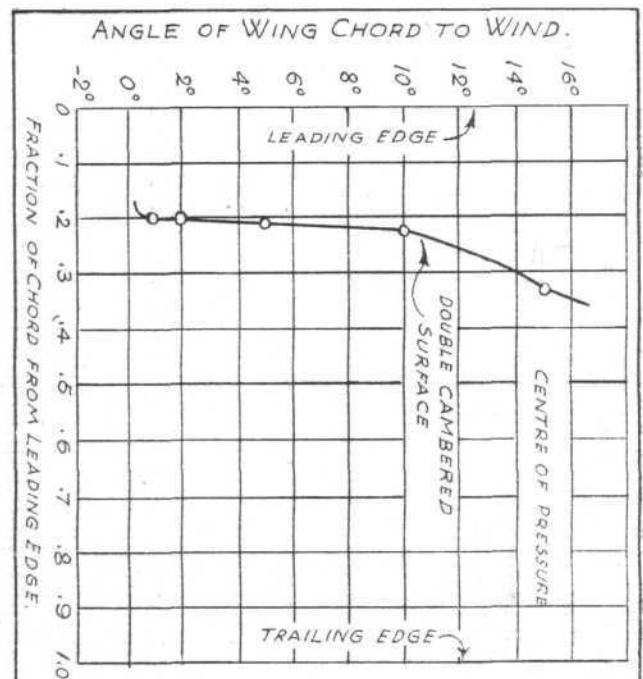


ing sketch shows actual size of model. We do not think this section is employed on the machines you mention.

G. B. W. (Helensburgh).—The altitude record established by the Italian aviator Papa is for a two-seater machine (pilot and one passenger). The other record to which you

refer, but of which we have no recollection, was probably for pilot only. The body to which you refer is the Civil Aerial Transport Committee. No report has yet been issued.

C. A. O. (Barrow-in-Furness).—The travel of the centre of pressure on the symmetrical (stream line) tail plane tested for



the Curtiss Co. at the Massachusetts Institute of Technology is illustrated in the accompanying graph.

C. P. F. (Watford).—The American aviation journal, *Aerial Age*, is published by the *Aerial Age Co., Inc.*, Foster Building, Madison Avenue and Fourtieth Street, New York City, U.S.A. The subscription is \$5 (£1) a year. You should have

no difficulty in obtaining a regular supply. (1). This is an imaginary machine. (2). The S.E. with a single "I" strut on each side is an S.E. 4. It is no longer being used. (3). A Wight seaplane.

C. E. B. (Brighton).—We are afraid we cannot tell you how a "side loop" is accomplished. This is one of the "tricks of the trade" which can only be properly explained by a pilot capable of doing it. Perhaps some pilot among our readers will oblige us and our readers by telling us "how it is done."

AIRISMS FROM THE FOUR WINDS

AIR FORCE.

ROYAL AIR FORCE.

"R.A.F."

ALL quite natural and inevitable once the original name was launched. It might, nevertheless, occur to some that a subtle hand with an eye on the inevitable had had one of its fingers in the pie when the selection of the title was going forward. It's euphonious, anyway, and that's the main thing.

JOHN OXENHAM, that poet of high thoughts upon all subjects appealing to the human heart, has sent forth a helpful poem in connection with the welfare and comfort of the W.A.A.C.s and W.R.E.N.s, who by giving their services to these organisations are not only doing the most valuable work, but are thereby releasing men for more active service, unsuitable for women. The following are the lines which Mr. John Oxenham has written, and which, with his usual generosity, he permits us to publish:—

*Great work! State work!—willingly done and well,
For the men who are doing so much for us,
Ay—more than words can tell!
Right work! White work! faithfully, skilfully done,
But the whole of the soul of it will not be known
Till the war is properly won.*

They mend the men; they tend the men;
They help them carry on;
They drop a little veil upon
The woes they've undergone.

They feed the men; they speed the men;
They make their daily bread;
They mend them while they're living,
And they tend them when they're dead.

There's many a lonely man out there
They've saved from black despair;
There's many a lowly grave out there
Made gracious by their care.

They toil for them; they moil for them;
Help lame dogs over stiles,
And do their best to buck them up
With cheery words and smiles.

They're just a little bit of home,
Come out to lend a hand.
They're gleams of bright warm sunshine
In a dreary weary land.

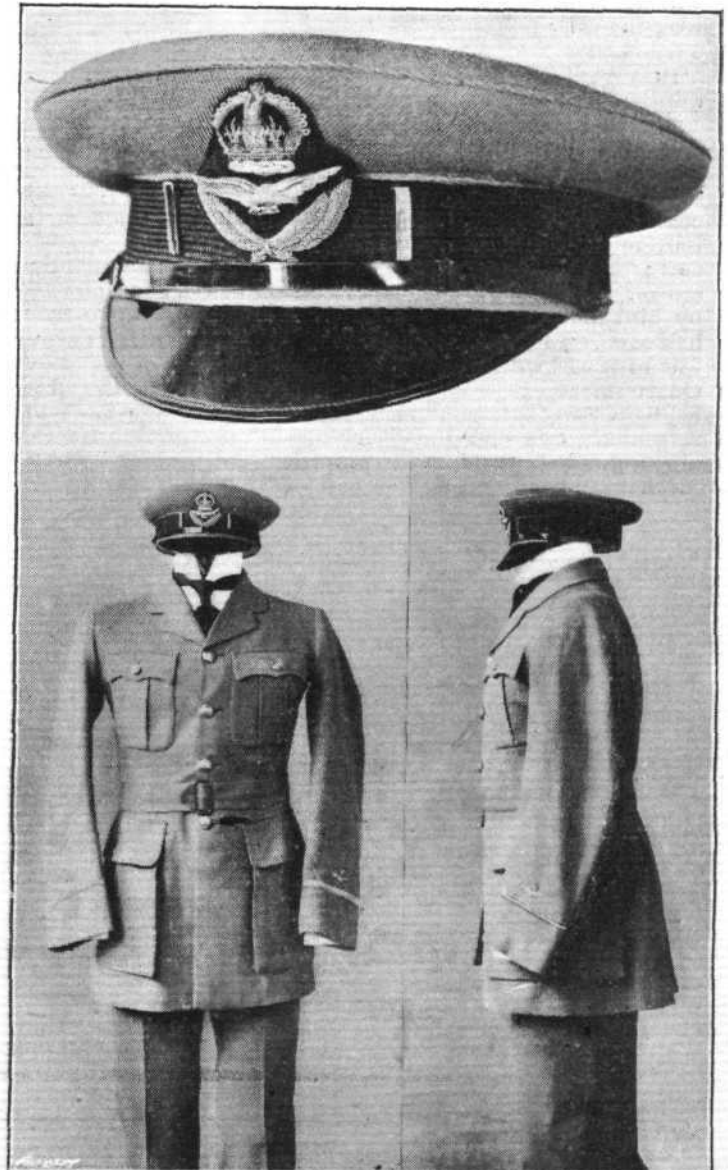
They are sweet as pinks and daisies,
Just the sight of them is good.
When you've lived for eighteen months or so
In a sink of Flanders mud.

*New work, true work, gallantly, patiently done,
For the men who are giving their all for us—
Your brother, your lover, your son.
High work! Thy work, if truly to Thee it's done!—
But we never shall know all the debt we owe
Till the war is really won.*

It is a speaking tribute to the work of our womenfolk, and with the expansion of these bodies, there arises the necessity of making provision for a body of women who, by enlisting, leave their homes and friends to face new and trying conditions, in which, needless to say, the road is not necessarily always smooth and even. With the object, therefore, of establishing Y.W.C.A. huts and recreation rooms, in charge of experienced and sympathetic club leaders, funds are greatly needed. This is urgent for the new development, and all of those to whom the work of the girl war-workers appeals, should generously support these funds. This week a special effort has been in operation in the West End of London, Lord Hambleton having consented to act as treasurer, and those who may by chance have missed their opportunity of adding their practical sympathy can quickly overcome the difficulty by sending along any sum to the treasurer at 19, Arlington Street, S.W. It won't be too late.

SOME months ago it was alleged in a daily contemporary that the uniform of the new Air Force—"R.A.F."—was to be "light blue with silver" trimmings. We ventured to hope at the time that it would hardly be as drastic as that! And now, in spite of official adherence to the "light blue" legend, it will be found that our "prayer," at least let us hope that was the cause, has been answered and the scheme is not as drastic as it purports to be. We do not profess to be up in all the technique of unique colours, as applied to tailoring material, and therefore we are not going to confess to being colour blind without a struggle, but if the colour, as originally selected, of the regulation "light blue" uniform cloth is anywhere near to that which is now available, in very limited quantities—well, all we can say is, that, if the "light blue" is still adhered to, and rightly so, then we shall have to admit we are colour blind.

PERSONALLY we should prefer to describe it as a smokey-slatey blue, and in the complete uniform is exceptionally smart and distinctive without being in the least assertive, the gold braiding—not silver—helping to set off the softness of the colouring. At present any officer who is seen in its full glory, even for evening plumage, will, indeed, be a *rara avis* owing to the non-existence and non-procurability of the particular cloth. Burberry's in this respect appear to have struck lucky and we doubt whether many others have any at



The new uniform of the Royal Air Force.



A D.H. 5 biplane on view in Trafalgar Square in connection with the Y.W.C.A. Blue Triangle Week.
Front view.

all. Even this well-known Haymarket firm have barely enough to even fill the requirements of the top-rangers, so that with the general run of officers who do not get in pretty smartly, it will probably mean having to have patience until after the war.

IN regard to rank distinctions, the following will, we think, not be found very wide of the mark.

Second Lieutenants and Lieutenants will wear an upright metal bar each side of the cap badge, and captains will wear two upright bars on each side. Field Officers will wear one row and General officers two rows, of gold oak leaves, round the peak. Rank will also be denoted by bands of braid at the bottom of the sleeve, navy style, but minus the executive curl; Second Lieutenants will wear a bird surmounted by a crown. Lieutenants one row of braid or gold lace surmounted by bird and crown. Captain, two rows. Major two and a half rows. Lieutenant-Colonel, three rows, Colonel, four rows. The men will wear a bird in red silk at the top of the sleeve. Quartermaster Sergeants will wear a crown, below the elbow, a Flight Sergeant, three chevrons and crown; corporals and sergeants two and three chevrons respectively. Ist class air-mechanics, two-bladed propeller under bird, wireless mechanics, hand and thunderbolt under bird.

A TRULY Gilbertian situation has arisen over the Huns' night bombing of Paris. During the recent attack the Embassy of one of the enemy Empires was damaged by a bomb. Two days later the caretaker of the building applied to the Legation of a neutral state which is charged with the interests of the enemy in question during the war to present to the French Government a bill for the damage. The bill which France is expected to pay for the damage done by the enemy to his own property is over £160.

THE conveyance of mails is both literally and figuratively in the air. Several times recently we have recorded progress in this direction, and from a Swedish source it is stated that aeroplanes are daily conveying letters between Berlin, Hanover and Cologne. We can believe it. Nothing like real live "practice" of this definite character to make perfect.

To the Archbishop of Naples has come a telegram from the Pope deploring the Huns' air-raids on that city and the loss of life among the peaceful citizens. It is to be feared the Pope will not have cause to feel that His Holiness has been slighted, as even Rome will now hardly remain sacred to the blood-bedabbled wild beast of the world. Rome's turn is probably next, and that it is thought to be so may be gauged



Side view from behind of the D.H. 5 biplane on view in Trafalgar Square in connection with the Y.W.C.A. Blue Triangle Week.



THE GERMAN AGO BIPLANE.—In our issue of December 13th, 1917, we published scale drawings and detail sketches of the Ago biplane. We are able this week to supplement the illustrations then published by the two accompanying photographs.

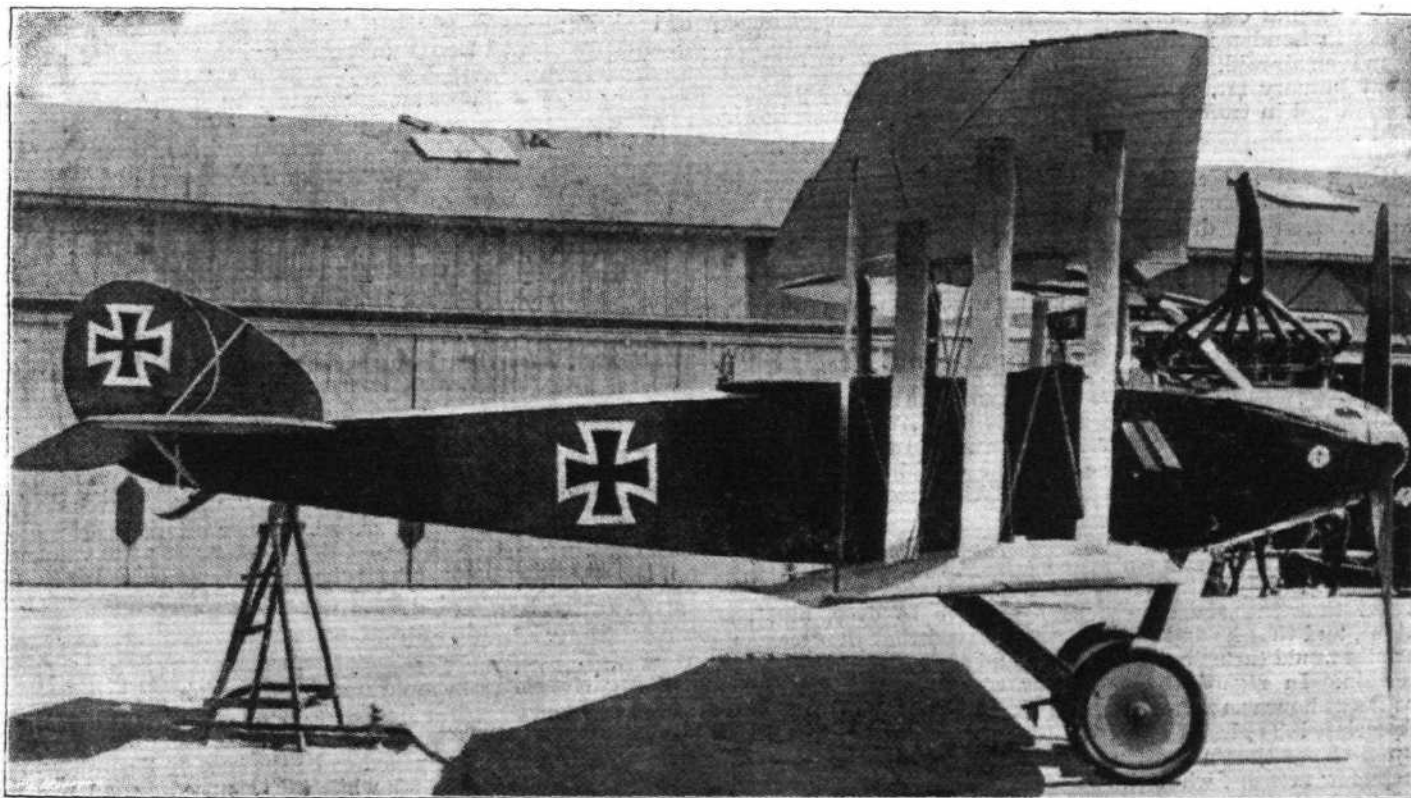
from a new decree published by the Prefect of Rome on March 15th, limiting the lighting of the city and Province of Rome. The decree has the double object of saving electricity and darkening the towns as a precaution against air raids. Street lighting, which has already been much reduced, is to be further diminished by 50 per cent. No lights are to be displayed outside buildings except to indicate chemist shops and places selected as "refuges" in case of air attack, which will display one dim red light.

At 10 o'clock in the evening all lights must be extinguished on staircases which have an outside window or skylight with the exception of one candle to indicate the way to the cellars. An hour and a half after sunset shutters must be closed so as to prevent any light showing outside.

It's a sorry business from first to last, and somehow we fancy by this time, those in Paris who set out their thoughts

a month or so ago, as to their feeling humbled at the whole of the bombing outrages being handed out to London instead of Paris also receiving its share, and thereby giving a little relief to our citizens, may well feel that they are open to revise their views.

THAT the Shipping Problem is about the hardest nut to crack, without injuring the kernel—no not Colonel, that part's all right—the Government have had so far to face, is by general consent admitted. That it *will* be set right no manner of doubt exists. But what strikes one is the remarkable fact that top-hole politicians, knowing of all the backdriving of production by the overpowering current of inefficiency, have not thought it right long since to have taken the necessary steps to divert this overwhelming flow towards "defeat" in the form of famine.



ANOTHER VIEW OF THE AGO BIPLANE.—A slight difference in the strutting is noticeable in this view. The machine previously described in "FLIGHT" had a diagonal (incidence) strut between the two outer interplane struts. In the machine shown in this photograph this strut, it will be seen, has been replaced by a wire, thus conforming more with standard practice.

WE are not prepared to express an opinion upon the wisdom or otherwise of publishing the real figures, although as a general axiom, it may be accepted that the truth will always be found to pay in the long-run. At the same time, if it be necessary for the loss figures to be given to instil life into the Department hitherto responsible for not building ships, why in Heaven's name have not these vital data been forthcoming months ago? This week it is expected that Sir Eric Geddes may be able to give what is asked for, and, according to Mr. Bonar Law in the Commons, the figures would have an astounding effect on the men in the yards. It is to be hoped that the remedy, in the persons of Lord Pirie and others, may be announced as an accomplished fact at the same time.

QUITE a valuable move, and of vast interest to aeronautical constructors, is the foundation of a Professorship of Forestry which some time ago was decided upon. Sir William Schlick, F.R.S., who holds the chair of this Professorship at Oxford University, has just received £500 to help along the endowment from a donor, who wishes to remain anonymous, to be added to the Fund for the permanent endowment of the Professorship of Forestry. With the sums already contributed, the capital of the fund now amounts to over £6,300, and the annual income from all sources to about £300 a year, making about half of what is required.

AN aerodrome recipe for camouflaging a Handley-Page. Paint Scotch jokes all over it; the Germans would never see them.

N.B.—Scottish readers are informed that there is no need to write a letter of protest to the Editor; this has already been done.

THE Church Militant has a worthy representative in the Rev. W. B. Hanks, of St. Peter's, Notting Hill. Speaking at the Kensington Tank recently, he said to his audience: "You must weld this sword of your gold, and a bayonet forged of your silver and a bullet forged of the copper of your pence.

"I have seen Belgium under the hoof of these God-forsaken despots. Night and day, week by week, year by year, there goes up from the serried ranks of this tremendous host, 'Gott Strafe England.' It is a war cry, a litany, a challenge and a prayer.

"God help you if ever you feel and know what appalling suffering will issue from the German hoof. If they got here you would have as much use for your money as Dives had for his in Hell."

THIS is the sort of militarism we can put up with.

A MORNING contemporary has worked out that crossing a street in London is at least 2½ times more dangerous to life than is an air raid. Official figures show that in the nine months from January 1st, 1917, to September 30th last 487 persons were killed in traffic accidents and 191 lost their lives in air raids.

ONCE again, Mr. G. H. Roberts, Minister of Labour, is fully justifying the selection of himself for the office which he holds. He is no dreamer of the Bolshevik type, but a man of wide and far-seeing judgment. Rightly his ideal is to make the lot of the worker one more in keeping with humane surroundings, by securing, after the war, such co-operation between employer and employee, as shall lead to the interests of each being the interests of the other. That way lies the future of the British Empire. If the workers who have doubts upon their own limited views will only be guided by so sound a champion, they need not worry about their future. Rather they would be free to put all their soul into their munition work, of whatever nature, so that the would-be Hun tyrant of the world, may the sooner be, for all time, rendered innocuous for harm.

MR. ROBERTS during a stirring speech to the Industrial League recently set out to his audience that reports indicated that the Kaiser was as aggressive as ever, and as pious, and that he and his advisers believed that the German armies would thrust back the Allies, and make a German peace certain. In regard to the labour conditions in Germany, as far as he was able to ascertain them, the President of the Associated Trades Unions of Germany was to be relied upon to see that no serious strike was fomented during the next few months, while the Majority Socialists were believed to have their movement well in hand. This meant that Germany was never more united, that militarism was never more rampant, that the enemy peoples were never more confident of victory and never more buoyed with the hope of territorial extension and the exaction of indemnities.

All this, Mr. Roberts continued, made it imperative that we should preserve unity at home, that we should continue to display the tenacity characteristic of our race. As far as could be judged, our defences were so strong, the spirit of our splendid soldiers so unflinching, and their courage and bravery so indomitable, that the German fury would be withstood, and ere long the enemy would be compelled to acknowledge that Great Britain and her Allies possessed the power and the will to make the world safe for democracy and right.

DIFFERENT estimates of the real value attaching to the "Chivalry in the Air" crop out occasionally and Mr. T. Ernest Moore, of Clapham Park, enters a protest against "the sporting Hun" in this element as recently described by Rear-Admiral Mark Kerr. Mr. Moore's views are that "We Britishers are, I suppose, the most guileless people on earth, and the Prussians the most cunning, and in dealing with them it is always wise to search for the ulterior motive. They leave nothing to fortuity; every action is weighed with the minutest care. Their armies and submarines have been successful, and German brutality prevails in these branches of the war. Conversely, the supremacy of the air is, at present, an unknown factor, and possibly a weak spot in the Teuton armour. So the acute 'General Staff' in the Moltke-Strasse instructs its airmen to posture as 'knights-errant' in battle, and decrees that prisoners of enemy flying corps shall be treated in hospital with humanity bordering on kindness. Two very important deductions may be drawn from these facts which the reader can supply." Where the Hun is concerned, it is perhaps just as well always to take the main chance into consideration.

TEN YEARS AGO.

Excerpts from the "Auto." ("FLIGHT's" precursor and sister journal) of March, 1908. "FLIGHT" was founded at the latter end of 1908.

GERMAN ARMY AIRSHIP TEST.

At the founders' meeting of the Hambourg Airship Club, an announcement was made respecting a test which the German War Office had framed as a means of demonstrating the usefulness of an airship. In order to pass through an official trial an airship must be capable of ascending to a height of 2,700 ft., of manœuvring for an hour, of descending to the ground, and then of rising and repeating the manœuvre without discharging ballast or gas.

THE MICHELIN PRIZE FOR AERONAUTS—A GENEROUS GIFT.

It is well for progress that new ideas excite the sympathy of the wealthy, for without their support much that has been done in the world would undoubtedly have taken far longer to accomplish. Aeronautics has been a "favourite child" with many, but unfortunately some who have offered their assistance have expected prodigious feats in return. Messrs. Michelin have taken a broad-minded and generous view of the situation, for besides presenting the Aero Club of France with a trophy valued at £400, they have also established a series of money prizes of the aggregate value of £10,000. Of this sum £4,000 is to be set aside for a special prize, to be won by the first aviator whose machine succeeds in accomplishing a specified flight with two persons, while the remainder (£6,000) is to be distributed in sums of £600 annually to the aviator accomplishing the longest free flight over a closed circuit, provided always that the distance so flown is at least double that achieved by the current winner of the prize.

COST OF BRITISH MILITARY AIRSHIPS.

According to the Army Appropriation Accounts for 1906-7 the expenditure on "Nulli Secundus" up to March 31st, 1907, amounted to £6,679 4s. 9d. Other interesting figures given are the sum of £9,091 9s. 6d., representing the value of articles manufactured and services performed at the balloon factory, which compares with the sum of £8,810 6s. 2d. for the year 1905-6.

TWO SIMULTANEOUS FLIGHTS.

In the present embryonic stage of free flight, it is a matter of interest that two machines should have succeeded in simultaneously flying in the air while practising on the same trial ground. This happened to be the case on Saturday last at Issy-les-Moulineaux, for while Mr. Henry Farman was in the air on his No. 1 machine, M. Delagrangue succeeded also in rising with his similar aeroplane, and executed a flight of over 600 yards. Mr. Farman during the day made several successful flights, and once completed a circular course of considerably over a kilom. in length.

Personals

Casualties.

Second Lieutenant RONALD W. ST. GEORGE CARTWRIGHT, R.F.C., who as announced in "FLIGHT," March 7th, was killed on February 26th, was the second son of Mr. Arthur Cartwright, late H.M. Inspector of Schools for the Worcestershire District, and of Mrs. Cartwright, of Rothbury, Hay, Hereford, and grandson of the late Colonel Heywood, of Great Malvern. He was one of three brothers in the Forces, the youngest of whom, Second Lieutenant Eric Cartwright, 4th Leinster Regiment, and M.G.C., was killed in the battle of the Somme, in 1916. He was educated at Bilton Grange, Rugby, and Malvern College. He had only been a few months in British Columbia when war broke out, and joining up immediately in Victoria he came over with the Canadian Contingent early in 1915. After only a few days in England his company was ordered out to reinforce the Canadians at Ypres, and with the 16th Canadian Scottish he served through all the fighting there and in the charge at Festubert. On one occasion he was buried by a big shell, and shortly afterwards was invalided home and had to undergo an operation for appendicitis. He suffered from shell shock for 18 months, but made a marvellous recovery, and almost before he was really fit again he obtained a commission in the R.F.C., and went to the front in September, 1917.

Lieutenant ERIC DENISON SEYMOUR CASSWELL, Rifle Brigade, attached R.F.C., was the younger son of Mr. and Mrs. Casswell, of Rusper, Sussex. He was a scholar and exhibitioner at Tonbridge School, where he was in the cricket XI, and proved himself a good all-round athlete. From Tonbridge he gained a scholarship at Pembroke College, Cambridge, and he had been in residence there a year when war broke out. He quickly obtained a commission in the Rifle Brigade. For a time he was attached to the Army Cyclist Corps, and he went to France early in 1915. On re-joining the Rifle Brigade he saw much fighting, and twice he was wounded slightly. In the summer of 1917 he came to England to be trained for the R.F.C., returning to the front early in October as an observer in a night-flying squadron. With his pilot he was killed in action on the night of November 7th, 1917.

Captain RALPH ERSKINE, R.F.C., reported missing on January 1st last, is now unofficially reported as having been killed in an air battle on that date. He was the younger son of Capt. James Erskine, Gordon Highlanders, and brother of Capt. T. Barrie Erskine, M.C., Gordon Highlanders, who was killed in France in 1915. He was educated at Allen Glen's, Glasgow, the late Headmaster of which recently spoke of him as "being a modest, kindly, courteous gentleman of finest quality as student, athlete, and soldier, and probably the brightest spirit the school had ever known." When war broke out he was a medical student at Glasgow University, and immediately joined up. He was given a commission in the Royal Scots Fusiliers, and saw some heavy fighting in France, being captain in that regiment at the battle of Loos. He afterwards joined the R.F.C., and served for a considerable time as an observer in France, where he was wounded, and mentioned in despatches. After getting his "wings," he returned to France, and was sent from there to another front, where he was the first British airman to fall. He was a noted athlete, and represented Scotland in international long-distance races. He won the Public Schools Boxing Championship, and the amateur featherweight championship of the world. He married in March, 1917, Lennie, only daughter of Mr. and Mrs. W. Higgins, of Wimbledon, who, with an infant son, survives him.

Second Lieutenant CHARLES RONALD MOORE, Pilot, R.F.C., who was killed in action on March 8th, aged 18, was the eldest son of Mr. and Mrs. Charles E. Moore, late of Worcester, and 6, Moorgate Street, London, E.C.

Lieutenant HEW W. BROOKE RICKARDS, R.F.A., attached R.F.C., reported missing on July 28th, 1917, and now officially presumed to have been killed that day in aerial action, was the only son of the Rev. and Mrs. W. Brooke Rickards of The Rectory, Sanderstead, Surrey. He was born in 1896, and educated at Arden House School and at Uppingham. He left school in 1914, and went to France to learn the

language, and when war was declared he enlisted in the French army being attached to the Foreign Legion, with which he saw nearly six months' active service. In February, 1915, he was transferred to the Home Army, receiving a commission, which was afterwards made permanent, in the R.F.A. He went out to France in July, being attached to a brigade. In August 1916, he was transferred to the R.F.C., and in November was wounded when in action. On recovery, he went through his training in England, and obtained his "wings" in May, 1917, when he returned to the front. On July 28th he was engaged on a bombing expedition behind the enemy lines, when he was reported missing, and he is now presumed to have been killed in aerial fighting that day.

Captain F. H. B. SELOUS, M.C., Royal West Surrey Regiment, attached R.F.C., who was reported missing on January 4th, 1918, and now officially reported killed on that day, aged 19, was the eldest son of the late Captain F. C. Selous, D.S.O., the well-known African hunter and explorer, who was killed in action in East Africa, on January 4th, 1917. He was educated at Bilton Grange, Rugby, and at Rugby, where he showed signs of becoming a fine athlete, and was in the Running VIII and captain of the Rugby XV in 1915. He entered Sandhurst in September, 1915, and on leaving in April, 1916, was gazetted to the Royal West Surrey Regiment and attached to the R.F.C. He went to the front first in July, 1916. He was awarded the Military Cross and the Italian Silver Medal of Military Valour.

Flight Sub-Lieutenant T. R. SWINBURNE, R.N., who has been missing since June 8th, and is now presumed by the Admiralty to have been killed on that date, was the only son of Major and Mrs. T. B. Swinburne, of Holmwood, Beechwood Avenue, Finchley, and formerly of Glassensikes, Dartington. Born in February, 1898, he was educated at Westminster School, and King's College, London. Joining the R.N.A.S. in June, 1916, he went to France in May, 1917.

Captain RICHARD J. TIPTON, R.F.A., attached R.F.C., who died of wounds on March 11th, aged 25 years, was the third son of John W. and Mary Tipton, Oxtou, Birkenhead.

Second Lieutenant GEORGE W. A. WATSON, R.F.C., who was killed on March 7th, was the eldest and only surviving son of the late James Watson, of Conistone, near Grassington, and was 20 years of age. He was educated at Appleby Grammar School, and when war broke out he was an engineering student at Leeds University, where his work showed signs of great promise; and he immediately offered himself for service in the R.N.A.S. As he was only 17 at the time, he was refused as too young, and he then enlisted in the R.N.D. After serving for some months he was brought back to Leeds to take a position as assistant manager of a department in a shell factory; but this work did not satisfy him, and he soon applied again for a commission in the R.F.C., and was successful. At the end of his training he came out head of 300 in the examination. He went to the front only a fortnight ago, and was accidentally killed, as stated on March 7th.

Major R. D. DE LA COUR CORBETT, Indian Infantry, attached R.F.C., who was born in 1881, was the elder son of the late Colonel R. de la Cour Corbett, D.S.O., R.A.M.C., and Mrs. de la Cour Corbett, of 13, Goldington Road, Bedford, and was educated at Bedford and Sandhurst. He was a keen athlete and sportsman, and played Rugby football for the R.M.C. against the R.M.A. in 1900. In 1901 he was gazetted to the Royal Irish Rifles, and served through the South African War, being awarded the medal with four clasps. In 1904 he was transferred to the Indian Army, and was gazetted to the 48th Pioneers and afterwards became adjutant of the regiment. In 1908 he was sent on famine duty in the Utroula District, and in 1912 was appointed tutor to the young Raja of Awa. When war broke out he rejoined his regiment, and went to Mesopotamia in November, 1914. He was one of the gallant band who under General Townshend were besieged for five months in Kut, and was taken prisoner at the fall of that garrison and sent to Kastamouni, in Asia Minor. He was mentioned in despatches in May, 1916. The camp at

Kastamouni was broken up in October, 1917, and the prisoners marched to Changri, where he died on Christmas Day of rupture of the heart due to strain.

Lieutenant THOMAS SYDNEY OUGH DEALEY, Australian F.C., killed, as announced last week, while flying on March 7th, was born in Hong-Kong in 1896 and educated at Stonyhurst College, Lancashire. After leaving he went to Roseworthy Agricultural College, South Australia, where he obtained his first-class diploma in Agricultural Science and highest aggregate of marks in finals for Agriculture and Veterinary Science, as well as the special medal for the latter. At Stonyhurst he became vice-captain of the school and of the football team. He also played for the college cricket eleven in two successive years. He was a good all-round athlete and an excellent exponent of boxing, golf and tennis. When at Roseworthy he won the Old Students' Cup.

Flight Sub-Lieutenant CYRIL WILLIAM EMMETT, R.N., who was accidentally killed while on active service, on March 15th, aged 19, was the youngest son of Richard Emmett, M.D., J.P., and Mrs. Emmett, of Winton, Portsmouth. He was educated at Lynam's Preparatory School, Oxford, and Repton College, and entered the R.N.A.S., in May, 1917. He went overseas on January 16th.

Second Lieutenant ROBERT F. FEAR, Worcester Regiment, attached R.F.C., who recently died of wounds, was son of the late William Henry Fear, of Walthamston. He was educated at Highfields School, and intended entering one of the universities, but, when only 18 years of age, he joined the Artists' Rifles. He received his commission last September, and, subsequently transferring to the Royal Flying Corps, was wounded while flying on artillery reconnaissance.

Second Lieutenant J. P. HAMILTON, R.F.C. ("JACK"), who was accidentally killed on March 8th, abroad, aged 18, was the only son of Mr. and Mrs. Percy Hamilton, 6, Greenhill Crescent, Harrow-on-the-Hill.

HENRY RALPH LUMLEY (late second Lieutenant R.F.C.), who died at the Queen's Hospital, Sidcup, on March 11th, in his 26th year, was the son of the late Ralph Robert Lumley and of Florence Lumley.

Second Lieutenant KEITH KNOX MUSPRATT, M.C., Dorset Regiment, attached R.F.C., who died on March 16th as the result of an accident while flying in Suffolk, aged 20, was the youngest son of Charles D. Muspratt, M.D., of Bournemouth.

Second Lieutenant WALTER SONDHEIM, R.F.C., who was accidentally killed while flying on March 4th, aged 20, was the only son of Mr. and Mrs. S. Sondheim, of Park Town West, Johannesburg.

Captain H. CLIFFORD STROUD, R.E., attached R.F.C., who was accidentally killed on the night of March 7th-8th, aged 24, was the only son of Professor H. Stroud, of Armstrong College, Newcastle-on-Tyne. After spending two years in the O.T.C. of Durham University, he joined the Northumbrian Divisional R.E. Territorials in 1912, and on the outbreak of war immediately volunteered for foreign service. He went to France with the 1st Field Company, N.R.E., and was severely wounded in the legs on February 18th, 1915. He spent many months in hospital, and on his recovery went to Otley, and was engaged in the teaching of bombing and trench warfare.



Another Honour for Commander Moon.

FLIGHT-COMMANDER E. R. MOON, D.S.O., R.N.A.S., who, as announced elsewhere, receives a bar to his D.S.O., has also been awarded the Royal Humane Society's silver medal for his gallant and prolonged attempt to save Commander Bridgeman, R.N., in January, 1917, when their seaplane came down in the delta of the Rufiji River, East Africa, and was burnt.

Gallant Work During Air Raids.

LIEUTENANT-COMMANDER SLADEN, Chief Officer of the London Fire Brigade, presented, at the headquarters of the London Volunteer Rifles on March 14th, an award of merit to Lance-Corporal Wheeler for heroic rescue work under dangerous conditions at a fire during one of the recent raids on London.

The Defence of London.

IN view of the fact that numerous communications are being addressed to the Air Ministry respecting the defence of London and neighbouring counties against attack by hostile aircraft, the Air Ministry desire to make it publicly known that they have no responsibility in this matter, and that

As his wounds had prevented his engagement for active field work he joined the R.F.C. in July, 1916, and after he had obtained his theoretical training he qualified for his wings, and was gazetted on September 22nd, 1916. During the subsequent months he became an experienced and expert pilot. After taking his B.Sc. in engineering at Armstrong College, Newcastle-on-Tyne (Durham University), he proceeded to King's College, Cambridge and graduated B.A. He was a student of the Institution of Civil Engineers and a graduate of the North-East Coast Institution of Engineers, before which body he had read papers, and received institution prizes. He was gaining his practical experience at Sir William Arrol's, Glasgow, during the university vacations, and intended to complete his practical training after taking his degree.

Probationary Flight Officer WARWICK HACKWOOD TURNER, R.N., aged 18 years, who died on the 10th inst., following an operation, was the eldest son of Mr. and Mrs. Alfred Turner, of The Manor House, Twickenham. He was educated at The Old College, Windermere, at Bowden House, Seaford, and at Haileybury College.

Married.

On March 3rd, at Highbury, London, Second Lieutenant CECIL R. G. ABRAHAM, R.F.C., was married to HILDA, younger daughter of WILLIAM WENS POWELL, of Gamlingay, Cambs.

On December 1st, 1917, at Slough, Lieutenant JOHN FORSTER ALCOCK, R.F.C., son of the late John Forster Alcock and of Mrs. Alcock, Northchurch, Berkhamsted, was married to MARIAN WINIFRED, only daughter of Mr. and Mrs. Arthur Pullman, of Moscow.

On March 11th, at Bath, Lieutenant H. L. BILLINTON, R.F.C., youngest son of the late Robert J. Billinton and Mrs. Billinton, of Lea Hurst, Withdean, Brighton, was married to MINNIE, youngest daughter of the late ROBERT RYGATE, Wellington, N.S.W., and sister of Mrs. Hollond, Benhall Lodge, Saxmundham, Suffolk.

On March 16th, at the Parish Church, Barnes, A. EDWARD JACKSON, R.N.A.S., younger son of Mr. and Mrs. William Jackson, of Waddon, was married to LILIAN OLIVE, youngest daughter of the late GUARNARIUS SELLÉ and Mrs. Sellé, of Barnes.

On March 2nd, at St. Mary's Church, Southampton, Lieutenant HARRY ARTHUR PATON, R.F.C., son of the late Edward Lonsdale Paton, of St. James's, Piccadilly, W., and Perth, Scotland, was married to DOROTHY MARION, daughter of the late PHILIP BRAHAM, F.R.S., and Mrs. Foster-Welch, Southampton.

To be Married.

The engagement is announced between Captain J. G. SELBY, M.C., R.F.A. and R.F.C., only son of Mr. and Mrs. H. T. Selby, Northfield, Bromley, Kent, and DOROTHY, younger daughter of Mr. and Mrs. S. BARTRUM, Coniston, Bromley, Kent.

Items.

AMONGST the wills proved last week was that of Caroline Rosena, Lady White, of Old Sneed, Bristol, widow of Sir George White, first baronet, of "Bristol" aeroplane fame, at £30,041.

communications should be addressed to:—G.H.Q., Home Forces, Horse Guards, Whitehall, S.W.1.

Record Office of the R.F.C.

It is notified that the Record Office of the Royal Flying Corps was moved from South Farnborough to Blandford Camp, Dorset, on March 7th, and all communications should be addressed accordingly.

More Money Wanted for U.S.N. Air Service.

A MESSAGE from Washington says that Mr. Daniels, Secretary of the Navy, has asked Congress for an appropriation of \$188,000,000 (£37,600,000), double the sum originally proposed, for expenditure in connection with the Naval Air Service during the fiscal year. Mr. Daniels declared that recent war developments necessitated the granting of the larger sum.

A Long Flight in Italy.

It was reported from Rome that on March 15th two American officers, Major Ryan, pilot, and Captain Frost, observer, arrived in Rome from Foggia. On a S.I.A. machine they had flown the 340 kiloms. (about 212 miles), in 2 hours 38 minutes, making only one stop—at Naples.

INTERNATIONAL AIRCRAFT STANDARDS.

(Continued from page 292.)

3S32—Specifications for Heat-Treated Alloy Steel Forgings and Stampings.

(100,000 lbs. per Square Inch Tensile Strength.)

GENERAL.—1. The general specifications, 1G1, shall form, according to their applicability, a part of these specifications.

MATERIAL.—2. The steel from which these forgings or stampings are made shall conform to I.A.S.B. specification 3S3.

MANUFACTURE.—3. *Heat Treatment.*—(a) Forgings or stampings should be annealed before heat treatment.

(b) Forgings or stampings which fail to meet the physical tests, may, at the option of the purchaser, be reheat treated.

WORKMANSHIP AND FINISH.—4. (a) The forgings and stampings must be uniform in quality, free from pipes, laps, cracks, twists, and seams, and must have a workmanlike finish.

(b) A forging or stamping may be rejected at any time because of injurious defects or faults which are revealed by manufacturing operations, notwithstanding that it has previously passed inspection. Such rejected forgings or stampings shall be returned to the manufacturer at his expense. This clause shall not apply to materials fabricated after export.

PHYSICAL PROPERTIES AND TESTS.—5. (a) The heat-treated forgings or stampings shall have the following physical properties:

Tensile Test.—(b).

	Pounds per square inch	Kilograms per square milli- metre
Minimum tensile strength..	100,000	70.3
Minimum yield point ..	80,000	56.2
Minimum elongation in 2 inches or proportional gauge length ..	20 per cent.	
Minimum reduction of area ..	50 per cent.	

Impact Test.—(c) When impact-testing machines of the pendulum type are available, tests shall be carried out if required to determine the specific impact work of rupture in foot-pounds (or kilogrammetres). Results markedly lower than the average for this type of material will be sufficient cause for further investigation (or reheat treatment) of the material.

Brinell Hardness Test.—(d) The Brinell hardness test shall be made after the tensile test has been met. The procedure shall be as follows:

(1) Forgings with a Prolongation for Tensile Test Specimens. A hardness test shall be made on the prolong and on the opposite end of the forging. The hardness values obtained must agree within 3 per cent. Hardness values of other forgings in the same lot must agree with the average of the two test values within 3 per cent.

(2) Forgings or Stampings without Prolongations: Hardness tests shall be made on the forgings or stampings selected for the tensile test and must agree within 3 per cent. The hardness values of other forgings or stampings in the same lot must agree with the average of the values so obtained within 3 per cent.

(3) Forgings or Stampings from which a Tensile Test Specimen can not be procured: A hardness test shall be made on the forged bar representing the forgings or stampings. The hardness values of the forgings or stampings in the lot must agree with that obtained on the bar within 3 per cent.

SELECTION OF TEST SPECIMENS.—6. *Forgings or Stampings weighing 6 lbs. (3.7 kg.) or over.*—(a) If desired, each piece may be required to have a prolongation for the tensile test. Two per cent. of the forgings or stampings in each lot shall be subjected to the tensile test, unless a tensile test is specified for each forging or stamping.

Forgings or Stampings weighing less than 6 lbs. (3.7 kg.) and of Suitable Section for securing a Tensile Test Specimen.—(b) Two per cent. of the forgings or stampings shall be taken for the tensile test.

(c) Forgings or stampings from which no tensile test specimen can be secured shall be represented by a bar forged from the same material and to the ruling section of the forgings or stampings in the lot. The bar must be heat treated with the lot which it represents.

(d) At least one tensile test shall be made for each lot of 50 forgings or stampings.

(e) A hardness test may be required on each forging or stamping offered. At least 25 per cent. of the pieces in each lot shall be tested for hardness.

(f) All the forgings or stampings in a lot shall be heat treated at the same time, and if possible shall be from the same heat of steel.

DIMENSIONS AND TOLERANCES.—7. The forgings and stampings shall conform to the dimensions on the drawings within the tolerances specified. Surfaces which are to be machined shall admit of finishing to the required dimensions without leaving trace of the original surface.

PACKING, SHIPPING AND DELIVERY.—8. Small forgings or stampings shall be boxed for shipment; the gross weight of individual boxes must not exceed 220 lbs. (100 kg.). Each kind and lot of forgings or stampings shall be kept separate as inspected.

(To be continued.)

German Prisoners in Raid Zones.

As the German Government have intimated that they consider themselves entitled to place British officers in whatever localities may be convenient, whether specially liable to air raids or not, it is stated that the British Government have naturally decided to adopt a similar course.

The Raid on Paris.

It has been officially announced that the casualties in the panic at the Metropolitan Railway station in Paris during the air raid on March 11th were 70 killed and 71 injured.

The Municipal Council of Paris has decided to give assistance to families stricken in the recent air raids, and to grant perpetual concessions for their burial. The Government has decided that a special detachment of the military shall attend the funeral of each victim, and that the coffins shall be covered with a Tricolour pall.

Unsuccessful Attempt to Raid Naples.

A SEMI-OFFICIAL announcement issued in Rome on March 15th stated that at 10 p.m. on the previous day "two enemy airships were observed coming from the direction of the Vesuvius massif and flying towards Naples. All means of defence were at once put into action and prevented the enemy from flying over the city, which was not damaged."

The Raids into Germany.

A TELEGRAM sent out from Berlin on March 15th says:—

"During February the enemy made 23 air attacks on the German Homeland 13 of which were directed against industrial districts in Lorraine, Luxemburg, and in the valleys of the Saar and the Moselle. These 13 raids caused no interruption of work, and in the majority of cases the enemy aeroplanes

did not reach our works, thanks to our anti-aircraft guns. Of the remaining 10 attacks, three were directed against Trèves, and one each against Saarbrücken, Mannheim and Pirmasens.

"The enemy was unable to cause any military damage, but the damage to houses and private property was in many cases not inconsiderable. Twelve persons altogether were killed, 15 severely and 21 slightly wounded. One enemy biplane fell into our hands."

According to the *Cologne Gazette*, in the attack on Coblenz, five civilians were killed and 20 injured. Other reports state that in the attack on Mainz ten persons were killed.

Frankfurt house owners and householders are urged by the authorities to keep their street doors open when there is an aerial alarm, and to receive in their cellars persons seeking shelter.

Two German Crack Pilots Killed.

Two of the "star" German pilots have recently been killed in action. Lieut. Buddecke, who has been killed on an Eastern front had received the Order Pour le Merite, and was claimed to have brought down twelve enemy machines, while Capt. Baron von Tutscheek, who has recently fallen, after a fight with a French pilot, was credited with twenty-seven victories.

German Aircraft Over Holland.

ON the morning of March 18th Dutch coastguards fired on a number of Zeppelins which were cruising over territorial waters. At Neo (Ameland) and also at the Hook of Holland German aircraft were sighted apparently coming from the west.

On March 13th, a German aeroplane containing two officers, landed at Hulst, Zeeland.

THE SELECTION OF CANDIDATES FOR THE AIR SERVICE.

ADDRESSING the Medical Society of London on the above subject on March 11th, 1918, Dr. H. Graeme Anderson, M.B., said many things which were interesting to the general reader. He said, to realise the value of the standards of fitness required, it is well to know something of the aviator's duties in war-time. On the one hand, he usually had comfortable quarters, a good bed and food, and had not to undergo the long marches and discomfort of trench life as in the infantry work. He was usually out of range of enemy artillery fire, although subject to hostile aircraft attack. In weather unfit for flying he had much leisure time. On the other hand, in the few crowded hours of his daily work he might come through the most intense strain to which the human nervous system could be subjected. As it had been aptly put, an aviator's life consists of "long spells of idleness punctuated by moments of intense fear." He had to face extremes in the elements, intense cold, the sun's glare, rain, wind, fog and mist, and gusty or bumpy weather. There was the incessant noise of his engine; he might have long-distance patrols, in which the imagination was given free play to run riot, perhaps over the sea, with no land-marks and the dread of engine failure ever present in his mind. His visual acuity was sharpened, always on the look-out for hostile air-craft, watching for and registering the flash of enemy guns, taking photographs, noting movements of enemy troops, rolling stock, submarines, or other information of naval or military value, and subjected to more or less accurate anti-air craft gun fire from the ground. Often he had to reach altitudes where the available oxygen was reduced by one-half. He might have suddenly and rapidly to change height, as in the modern aerial fight in which he might be opposing more than one enemy machine. His judgment had to be most accurate to perform the various intricate aerial evolutions so as to outwit his opponent and gain a favourable position to rake him with machine-gun fire. He might have to loop, spin, dive, or side-slip, apparently out of control, in order to deceive his opponent or to decoy him over a friendly gun or near a friendly formation. There was the subconscious dread of his aeroplane catching fire in the air. Lastly, and most exciting of all, was the nerve-strain of contour chasing or ground strafing, in which he attacked the enemy on the ground from a low height of perhaps 20 to 50 feet.

Personal Experiences.

Dr. Anderson said with regard to the views expressed on the standards of fitness for such work, these were not to be taken as representative of any particular service, but were mostly personal gained from experience with the R.N.A.S. since the outbreak of the war. He had also been associated with aviators of the R.F.C. and at times with French, Belgian, and American aviators. For the past three and a half years he had lived with aviators, flown with them, and entered for the most part into their interests, studying them alike in war squadrons, in aeroplane, seaplane and airship stations, and in hospitals specially devoted to their maladies. He said "Let me pay my tribute to our flying men: that nothing is too good for them, and it is up to us as a profession to strive in every way we can to save them from disaster, and should disaster overtake them to find the means to restore them to health again."

Basis of Present Investigation.

He went on to say that they could help in this matter by knowing the requirements of the aviator's life, by studying the psychology and physiology of flying, and by investigating the maladies commonly found amongst flying men. By such means standards of fitness can be drawn up subject to modification from time to time. In eliminating the unfit—and man-power is an ever-increasing problem—he would suggest the institution of a special flying school where the border-line pupils could be instructed in flying under patient and sympathetic instructors and with a medical officer, specially interested in aviation, carefully recording the results. Such records would be invaluable to medical officers in confirming or modifying the present standards of fitness required for air work. The modern aviator's work is becoming more and more specialised and here again they could help by framing standards of fitness graded for the various flying duties.

Fine Fight by Greek Pilot.

It is reported from Salonika that, in a fight between a Greek aeroplane and three German machines at a height of 15,000 ft. above the enemy lines, the Greek airman put two of the enemy aeroplanes to flight and brought down the third.

Physical Requirements.

In selecting candidates for the Air Service what was looked for was a sound constitution, free from organic disease, and a fairly strong physique in order to withstand altitude effects, such as cold, fatigue, and diminished oxygen. It was essential there should be normal hearing and good muscle and equilibrium sense.

Eyesight.—As the aviator was so much dependent on his eyesight, too much importance could not be laid on this part of the examination.

Temperament.—But next to vision, and most important of all in obtaining the best aviator, was the question of temperament. Undoubtedly there was a particular temperament or aptitude for flying, and its distribution was peculiarly interesting, whether looked upon from its racial aspect and ethnological origin or in relation to previous health, life, and habits. Unfortunately, this temperament was a difficult matter to estimate clinically, and especially so in the examining room. The ideal aviator must have good judgment, be courageous, and not upset by fear, although conscious of the perils of his work. He must be cool in emergencies, able to make careful and quick decisions and act accordingly. His reaction times must never be delayed—he must be ever alert, as mental sluggishness in flying spells disaster. Whether he should be imaginative or not is a difficult question to settle—one met many of both types. He was inclined to think the pilot with imagination, yet able to keep it well under control, made the better pilot.

Previous training in sports.—With regard to relation of habits in this special aptitude for flying, the latter was found most commonly amongst those used to playing games and leading an outdoor life. The yachtsman and the horseman, with their finer sense of judgment and "lighter hands," should make the most skilful pilots. The Germans always selected their aviators from their cavalry until recently. It was thought that the racing motorists would make the best pilots, but this had not always proved to be so. Every now and then one met the type with splendid physique and apparently unshakable courage who learnt to fly indifferently or was unable to learn at all, and again one met the weedy pale type learning quickly to fly and turning out to be a first-rate pilot.

Family and previous history.—In estimating whether the candidate was likely to stand the strain of war-time flying much help could be given by inquiring into his family history as well as the history of his previous health.

Medical Tests of Aviation Candidates.

Candidates for the Air Service should be made to undergo (1) a surgical examination, (2) a medical examination, and (3) a special sense examination, preferably by experts in each line, and the final selection made on the total results by a medical selection committee.

Dr. Anderson then proceeded to outline the points which should be specially looked for in the surgical and medical examinations. In the course of this, he made the following observations on age, height, and weight:—

Age.—The age should be between 18 and 30 years. Under 18 and up to 20 caution and well-balanced judgment may be lacking; 24 is about the best age. Over 33 the candidate, although quite able to learn to fly, does not stand the nerve-strain of air work so well. Much depends on the physiological age. Cody learnt flying at 47, and was flying regularly till he met his death when 52 years of age.

Height does not matter much, but the candidate should not be under 5 feet 2 inches, as he would have difficulty in reaching the rudder bar or looking over the cockpit of the aeroplane.

Weight.—Naturally the lighter the candidate the better, but in modern times with the increased speed and climb of aeroplanes this does not count so much as formerly. Colour, physique, attitude and tone of muscles should be noted, especially the abdominal muscles, where lack of tone would allow of splanchnic flooding and the possibility of fainting in the air. Any surgical defect, no matter how small, should be recorded in the report, as such may be used and its significance exaggerated later by a pilot who has developed a distaste for flying.

Vacancy for an Artist.

A VACANCY occurs on the staff of "FLIGHT" for an artist and draughtsman, with some knowledge of aeronautical construction, who must be ineligible for military service. Applications should be addressed to the Editor of "FLIGHT," 36, Great Queen Street, Kingsway, W.C.1.



The British Air Service

"PER ARDUA AD ASTRA"



UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

Royal Flying Corps (Military Wing).

London Gazette Supplement, March 12th.

The following appointments are made:—

Squadron Commanders.—2nd Lieut. (Temp. Capt.) A. D. Bell-Irving, M.C., Gord. Highrs., S.R., from a Flight Comdr., and to be Temp. Maj. while so employed; Jan. 31st. 2nd Lieut. (Temp. Maj.) J. C. Callaghan, M.C., R. Muns. Fus., from Comdr. (graded as a Sqdn. Comdr.), School of Aerial Fighting, and to retain his temporary rank while so employed; Feb. 1st.

Flight Commanders.—From Flying Officers.—Lieut. G. Cory-Wright, E. Kent R., S.R., and to be Temp. Capt. while so employed; Feb. 5th. Temp. Capt. K. R. Paterson, Gen. List; Feb. 6th. And to be Temp. Capt. while so employed.—Lieut. D. L. P. S. Stuart-Shepherd, E. Lan. R.; Feb. 7th. Temp. Lieut. H. J. Scales, M.C., Gen. List; Feb. 12th. 2nd Lieut. R. C. Steele, D.S.O., S.R.; Feb. 13th.

Flying Officers.—Temp. 2nd Lieut. G. F. Warner, Gen. List; Nov. 21st, 1917. Lieut. (Temp. Capt.) J. E. Storey, S.R., from an equipment officer, 1st Class, and to relinquish his temporary rank; Jan. 11th (substituted for the notification in the Gazette of Feb. 8th). Temp. Lieut. R. F. Power, Gen. List, from a Flying Officer (Obs.); Sept. 15th, 1917, seniority from April 28th, 1916. Lieut. G. L. Shephard, E. Ontario R., Canadian Exped. Force; Jan. 30th. Lieut. R. A. Boyd, Res. of Off., from attd. R.E.; 2nd Lieut. L. S. Thompson, Yeo. (T.F.), and to be sec'd.; Feb. 5th. Lieut. A. J. P. Estlin, Canadian Cav.; Feb. 6th. Temp. 2nd Lieut. (on prob.) H. O. MacDonald, Gen. List, and to be confirmed in his rank; Sept. 30th, 1917. The appointment of Temp. 2nd Lieut. H. McDonald, Gen. List, notified in the Gazette of Oct. 20th, 1917, is cancelled. The appointments of the following Temp. 2nd Lieuts., Gen. List, notified in the Gazette of Jan. 22nd, are post-dated as follows:—E. R. Stock, to Dec. 27th, 1917; H. N. Arthur, to Dec. 28th, 1917.

Assistant Instructors in Gunnery.—Graded as Equipment Officers, 2nd Class.—From Asst. Instrs. in Gunnery (graded as Equipment Officers, 3rd Class):—Temp. Lieut. H. Bristow, Gen. List; Jan. 1st. Lieut. J. H. Turner, D. Gds., Lieut. A. V. Shewell, Glouc. R., Temp. Lieut. M. H. MacLucas, Gen. List, Lieut. J. A. P. Martin, Yeo. (T.F.); Feb. 1st. Lieut. E. V. Maclean, R.F.A. (T.F.), Temp. 2nd Lieut. F. G. Breckman, Gen. List, and to be Temp. Lieut. whilst so employed; Feb. 22nd.

Equipment Officers, 2nd Class.—From the 3rd Class:—Lieut. W. R. S. Humphreys, S.R.; Jan. 1st. Lieut. W. Redmond, Lan. Fus. (T.F.); Feb. 20th. 3rd Class:—2nd Lieut. N. Hemsley; Sept. 17th, 1917. Temp. 2nd Lieut. C. T. Davis, Gen. List, Temp. 2nd Lieut. W. E. Critchley, Gen. List, Temp. 2nd Lieut. D. P. McN. Laing, Gen. List; Jan. 1st. Temp. Qrmr. and Hon. Lieut. T. Hobson, Garr. Bn., N. Staffs. R., and to be transf'd. to R.F.C. Gen. List, Temp. 2nd Lieut. C. I. B. Voge, Gen. List, from a Flying Officer, 2nd Lieut. T. F. Beere, 2nd Lieut. J. Keyes; Feb. 1st. Temp. 2nd Lieut. R. H. Kemp, Gen. List, from a Flying Officer; Feb. 9th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—H. C. Craig; Dec. 3rd, 1917. E. W. C. Catling; Feb. 1st. A. R. Russell, M. B. Barraud; Feb. 9th. The appointments of the following Temp. 2nd Lieuts., Gen. List, notified in the Gazette of Jan. 18th, are antedated as follows:—V. C. S. Milner; Nov. 16th, 1917. R. R. Trout; Nov. 22nd, 1917.

Experimental Officers, 2nd Class.—(Graded as Equipment Officers, 2nd Class.)—From Equipment Officers, 3rd Class, and to be Temp. Lieuts. whilst so employed:—2nd Lieut. R. G. Watts, S.R.; Dec. 4th, 1917. 2nd Lieut. W. E. Bousfield, S.R.; Feb. 16th.

Schools of Instruction.—Schools of Military Aeronautics.

Commandant.—(Graded as a Wing Comdr.)—Temp. Capt. (actg. Lieut.-Col.) G. C. de Dombasle, Nova Scotia R., a Sqdn. Comdr., and to retain his actg. rank whilst so employed, vice Maj. (Temp. Lieut.-Col.) I. M. Bonham Carter, North'd Fus.; Sept. 10th, 1917. (Substituted for the notification in the Gazette of Nov. 12th, 1917.)

General List.—V. S. Lord to be Temp. 2nd Lieut.; Dec. 3rd, 1917. The Christian names of Temp. 2nd Lieut. (on prob.) James Murray Brown are as now described, and not as in the Gazette of Nov. 3rd, 1917; L. R. Paget, late 2nd Lieut. N. Staff. R., to be Temp. 2nd Lieut. (on prob.); Dec. 28th, 1917. Cadets to be Temp. 2nd Lieuts. (on prob.):—J. R. Aitken, A. M. Cross, T. Hodgson, J. Macintyre, J. E. Machin, C. A. Pierpoint; Feb. 23rd.

Memorandum.—To be Temp. Maj.:—Temp. Capt. (Qrmr. and Hon. Capt. R.F.C.) T. Lyons, M.B.E., while employed as a Dep. Asst. Dir. at the War Office; Feb. 25th.

London Gazette Supplement, March 13th.

The following appointments are made:—
Adjutant.—Lieut. A. G. Smith, M.C., Lrs., and to be Temp. Capt. (without the pay or allowances of that rank) whilst so employed; Nov. 1st, 1917.

Equipment Officers, 2nd Class.—From the 3rd Class, and to be Temp. Lieuts. whilst so employed:—Temp. 2nd Lieut. W. J. Maley, Gen. List, Temp. 2nd Lieut. N. H. Knock, Gen. List, 2nd Lieut. M. Myers, S.R., Temp. 2nd Lieut. J. P. Burden, Gen. List, Temp. 2nd Lieut. H. Haworth, Gen. List, 2nd Lieut. D. Mitchell, Temp. 2nd Lieut. E. A. Tottle, Gen. List; Feb. 22nd. 2nd Lieuts., S.R.:—A. W. McAuslane, H. K. Fairbrother, A. Dobson, C. E. Wykes, F. Walters, C. F. Gorrings, W. Chapman; Feb. 22nd. 3rd Class:—The rank of Temp. Lieut. E. A. Roberts, Gen. List, is as now described, and not as in the Gazette of Dec. 5th, 1917.

General List.—To be Temp. Lieuts.:—Temp. 2nd Lieut. (on prob.) J. J. Yates, July 29th, 1917, seniority May 8th, 1916. Temp. 2nd Lieut. C. V. McArthur, Feb. 15th. Temp. 2nd Lieut. (on prob.) T. Dixon, from S. Afr. Inf., is transf'd. to R.F.C. Gen. List, with his present seniority; Sept. 29th, 1917. To be Temp. 2nd Lieuts.:—G. A. Edwards; Dec. 3rd, 1917. St. J. G. S. Clerke (late Capt., W. Rid. R. S.R.); Feb. 18th. To be Temp. 2nd Lieuts. (on prob.):—E. G. Boyle, C. W. Bowman, R. C. Blanchard, T. E. Babbitt, L. Bennett, W. T. Carew, O. L. Calverley, J. D. Dunbar, P. Messenger, A. D. Patton, D. B. Sinclair, G. Swannell, R. J. Woods; Jan. 21st. Temp. Sgt.-Maj. L. Russell, from R.F.C.; Feb. 19th. C. R. Brown, Sir R. N. H. Cunliffe, Bt. W. O. Donoghue, J. C. Duncan, S. H. Fitter, J. P. Gill, A. S. M. Low, C. H. A. Morgan, G. A. Roper, F. J. T. Woodward; March 1st. Cadets to be Temp. 2nd Lieuts. (on prob.):—E. R. N. Main; Feb. 14th. E. G. Stott; March 14th.

London Gazette Supplement, March 14th.

The following appointments are made:—
Flight Commander.—Lieut. W. Deane, Norf. R. (T.F.), from a Flying Officer, and to be Temp. Capt. while so employed; Feb. 13th.

Flying Officers.—Lieut. A. L. Mercer, Nova Scotia R., Canadian Exped. Force; Jan. 20th. Lieut. A. Scott, M.C., R.F.A. (T.F.), and to be sec'd.; Jan. 21st. Temp. Lieut. L. F. Bettinson, Middx. R., from a Flying Officer (Obs.), seniority from Feb. 13th, 1917; Lieut. T. E. Bulteel, R.F.A., S.R.; Jan. 22nd. Lieut. E. M. Smith, Canadian Cav.; Jan. 23rd. Temp. 2nd Lieuts. (on prob.), Gen.

List, and to be confirmed in their rank:—C. S. Bowen; Nov. 27th, 1917. W. M. MacDonald; Jan. 21st. L. G. Costa; Jan. 22nd.

Flying Officers (Observers).—Lieut. J. A. McGinnis, Saskatchewan R., Canadian Exped. Force; Feb. 5th, seniority from Oct. 16th, 1917. Seniority from Oct. 25th, 1917, and to be transf'd. to R.F.C., Gen. List:—Temp. 2nd Lieut. S. H. Bingham, Ches. R.; Feb. 7th. Temp. 2nd Lieut. A. S. Hibbs, Notts. and Derby R.; Feb. 9th. Feb. 9th, seniority from Nov. 11th, 1917.—2nd Lieut. C. E. Lovick, R.F.A., S.R.; Temp. 2nd Lieut. C. J. Mahony, D. of Corn. L.I., and to be transf'd. to R.F.C., Gen. List; Lieut. C. R. Cuthbert, R.F.A., S.R., from 2nd Lieut., R.A.; Feb. 7th, seniority from Nov. 13th, 1917. Lieut. L. H. Scott, Cent. Ontario R., Canadian Exped. Force; Feb. 8th, seniority from Nov. 28th, 1917. Feb. 9th, seniority from Dec. 5th, 1917.—Lieut. F. H. Cantlon, M.C., Cent. Ontario R., Canadian Exped. Force; 2nd Lieut. H. E. Hall, Manch. R. (T.F.), and to be sec'd.; Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—R. A. Webster; Feb. 9th, seniority from Oct. 24th, 1917. S. Power, seniority from Nov. 21st, 1917. G. H. Olney, seniority from Dec. 29th, 1917; Feb. 8th.

Assistant Instructors in Gunnery.—Graded as Equipment Officers, 3rd Class.—Lieut. F. H. Astle, Ches. R. (T.F.), from a Flying Officer; Lieut. F. D. Owen, Lond. R. (T.F.), and to be sec'd.; Temp. 2nd Lieut. F. E. Glass, Gen. List, from an Equipment Officer, 3rd Class; Temp. 2nd Lieut. G. R. Waters, Gen. List, from a Flying Officer (Obs.); Temp. 2nd Lieut. L. W. St. George, Gen. List, from a Flying Officer; Temp. 2nd Lieut. D. D. Lockwood, Gen. List, from a Flying Officer; Feb. 5th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—J. F. Richardson, A. Wallas, J. J. Wilson.

Equipment Officer, 2nd Class.—Temp. Hon. Lieut. H. S. Hewitt, Gen. List, and to be Temp. Lieut. while so employed; Nov. 18th, 1917.

General List.—Temp. 2nd Lieut. W. C. Bersey to be Temp. Lieut.-Col. (without pay or allowances of that rank) whilst specially employed; March 15th. Lieut. S. Smith, from R.N.V.R., to be Temp. Capt.; Jan. 25th. Temp. 2nd Lieuts. to be Temp. Lieuts.:—W. H. R. Gould; Sept. 7th, 1917. G. R. Gray; Sept. 27th, 1917. J. J. Magill; Dec. 28th, 1917. To be Temp. 2nd Lieuts. (on prob.):—A. M. Backstrom, M. C. Brown, C. H. Church, A. H. Combs, C. S. Garden, C. Hunter, J. W. Ironmonger, C. D. James, E. MacD. Jarvis, W. H. Leaf, W. F. Long, J. L. Mazucco, N. H. Midgley, G. K. Mills, G. P. McCraig, R. T. Nixon, J. Pollins, J. M. Rankin, W. A. Rankin, J. Reid, F. W. Scrivner, D. A. Shanks, V. H. Simmers, L. R. Sinclair, W. A. Stead, L. H. Stiles, L. C. Storey, H. L. Tamplin, W. E. Taylor, S. F. Tear, H. D. Teetzel, C. E. Thomas, H. C. Thomas, B. H. Travis, P. Vigurs, G. W. Welch, N. A. Weir, H. L. Woolson; Jan. 12th. S. Campan, E. G. Corey, J. J. Hickey, R. L. Rideout, D. M. McBeath; Jan. 14th. H. A. Reid; Jan. 15th. E. W. Heller; Jan. 18th. C. J. Devlin; Jan. 19th. R. C. Davies, F. W. Ferguson, E. E. Fresson, C. MacI. French, J. A. Hynes, C. S. Gregg, L. A. Green, W. Gilbert, G. F. Geiger; Jan. 21st. A. E. W. Davis, W. J. Dayrell-Steyning (Maj., Surr. Motor Vol. Corps), Cdt. H. S. Reddick, from R.G.A.; March 1st.

Memoranda.—To be Temp. Majors, while employed as Dep. Asst. Dirs. at the War Office:—Temp. Capt. H. M. Bentley, Gen. List; Lieut. (Temp. Capt.) F. B. Burton, R.F.C., S.R.; Lieut. (Temp. Capt.) L. W. W. Lees, R.G.A., S.R.; 2nd Lieut. (Temp. Capt.) H. A. Browne, R.F.C., S.R.; Temp. Capt. W. H. Ewen, Gen. List; Lieut. (Temp. Capt.) P. C. A. Bridgman, A.S.C. (T.F.).
Supplementary to Regular Corps.—2nd Lieut. F. C. R. Johnson resigns his commission; March 15th.

General List (R.F.C.).—Cadet C. R. Maasdorp to be Temp. 2nd Lieut.; May 25th, 1917 (substituted for Gazette notification June, 26th, 1917, describing name as Maasdorp).

London Gazette Supplement, March 15th.

The following appointments are made:—
Flight Commanders.—From Flying Officers:—Temp. Capt. A. G. Waller, Gen. List; Lieut. S. B. Collett, Durh. L.I. (T.F.), and to be Temp. Capt. while so employed; Feb. 12th.

Flying Officers.—2nd Lieut. (on prob.) C. S. Bellamy, S.R.; June 15th, 1917. 2nd Lieut. G. Duerton, N. Lan. R. (T.F.), and to be sec'd.; Jan. 31st. Temp. 2nd Lieut. T. M. Speechly, Res. Regts. of Cav., and to be transf'd. to R.F.C. Gen. List; Feb. 2nd. Lieut. M. O. Haskell, R.F.A., S.R., from a Flying Officer (Obs.); Feb. 3rd, seniority from April 12th, 1917. Lieut. E. A. Foord, Manitoba R., Can. Exped. Force, from a Flying Officer (Obs.); Feb. 8th, seniority from Jan. 10th, 1917. The appointment of Temp. 2nd Lieut. C. B. Whitney, Gen. List, notified in the Gazette of Jan. 19th, is ante-dated to Sept. 1st, 1917.

Flying Officers (Observers).—Temp. Lieut. D. C. W. Sanders, R.A.; Dec. 8th, 1917, seniority Feb. 20th, 1915, and to be transf'd. to R.F.C., Gen. List; Temp. 2nd Lieut. H. J. Loughlin, R.E., seniority Nov. 22nd, 1917. Temp. 2nd Lieut. B. S. Andrew, E. Surr. R., seniority Dec. 6th, 1917, and to be transf'd. to R.F.C. Gen. List; Feb. 10th. 2nd Lieut. W. Hughes, R.F.A., S.R.; Nov. 23rd, 1917, seniority Sept. 3rd, 1917. Temp. Lieut. F. D. Howitt, A.S.C., seniority Nov. 29th, 1917, and to be transf'd. to R.F.C., Gen. List; 2nd Lieut. R. E. W. Sandall, Linc. R., from Temp. Lieut., Linc. R. (T.F.), seniority Dec. 5th, 1917, and to be sec'd.; Temp. Lieut. D. F. V. Page, Suff. R., seniority Jan. 3rd, and to be transf'd. to R.F.C., Gen. List; Feb. 11th. Temp. 2nd Lieut. (on prob.) H. Dandy, Gen. List, and to be confirmed in his rank; Sept. 14th, 1917, seniority July 22nd, 1917.

Assistant Instructors in Gunnery.—Graded as Equipment Officers, 3rd Class.—Temp. Lieut. H. M. Ayres, attd. Middx. R., from a Flying Officer; Lieut. G. Moon, R.E. (T.F.); Temp. Lieut. E. P. Boulton, M.G. Corps, and to be transf'd. to R.F.C., Gen. List; Lieut. H. Coverdale, Lond. R. (T.F.), and to be sec'd.; Lieut. T. McClelland, Cyclist Bn. (T.F.), and to be sec'd.; Temp. 2nd Lieut. J. N. Longfield, Lan. Fus., and to be transf'd. to R.F.C., Gen. List; 2nd Lieut. J. Rimmer, S.R., from a Flying Officer; Temp. 2nd Lieut. A. H. Waterman, Gen. List, from a Flying Officer; Feb. 5th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—M. C. S. Bowley, A. B. Taylor; Feb. 5th.

Balloon Officers.—Capt. C. K. Martin, Arg. and Suth'd Highrs. (T.F.), and to be sec'd.; Temp. 2nd Lieut. F. K. Ratcliffe, York and Lanc. R., and to be transf'd. to R.F.C., Gen. List; Feb. 12th.

Equipment Officers, 1st Class.—From the 2nd Class, and to be Temp. Cpts. whilst so employed:—Lieut. L. G. P. Warren, S.R., Lieut. J. F. Luscombe, S.R.; Jan. 1st. 2nd Lieut. (Temp. Lieut.) F. J. H. Palmer, S.R.; Jan. 20th. 2nd Lieut. (Temp. Lieut.) H. R. Brutley, S.R., Temp. Lieut. F. G. J. Didden, Gen. List; Feb. 1st. Lieut. F. M. Iredale, S.R.; Feb. 11th. Lieut. F. J. Game, S.R., from a special appointment (graded as an Equipment Officer, 2nd Class); Feb. 22nd. 2nd Class.—From the 3rd Class.—Lieut. F. L. Fletcher, Manch. R. (T.F.); Oct. 12th, 1917. Lieut. P. K. Turner, S.R.; Jan. 1st. And to be Temp. Lieuts. while so employed:—Temp. 2nd Lieut. J. Watson, Gen. List, 2nd Lieut. T. Sherman, S.R. Jan. 1st. Lieut. G. M. Wingate, Essex R. (T.F.);

Jan. 13th. 2nd Lieut. S. Beeby, S.R., and to be Temp. Lieut. while so employed; Jan. 29th. Temp. Lieut. H. J. Murphy, Gen. List; Feb. 1st. And to be Temp. Lieuts. whilst so employed:—2nd Lieut. C. C. Cruttenden, S.R., Temp. 2nd Lieut. M. P. Graddon, Gen. List, Temp. 2nd Lieut. G. B. Nicol, Gen. List, Temp. 2nd Lieut. C. H. Bell, Gen. List, 2nd Lieut. E. F. Sutton, S.R., Lieut. W. T. Wartnaby, S.R., Temp. Lieut. H. Day, Gen. List; Feb. 22nd. The appointment of Temp. Qrmm. and Hon. Lieut. C. A. E. Lloyd, Gen. List, notified in the *Gazette* of Feb. 26th, is antedated to Jan. 15th. 3rd Class Temp. 2nd Lieut. L. F. Jones, Gen. List, from a Flying Officer; Aug. 24th, 1917. 2nd Lieut. W. H. Gould, York and Lan. R. (T.F.), from Temp. Lieut. M.G. Corps; Dec. 6th, 1917. Lieut. H. A. Braddock, R.E. (T.F.), 2nd Lieut. D. H. Robinson, S. Staff. R. (T.F.), and to be sec'd.; Jan. 4th. Temp. Lieut. W. R. K. Ramsey, Lan. Fus., and to be transfd. to R.F.C., Gen. List; Lieut. J. E. Spickernell, E. Kent. R. (T.F.), and to be sec'd.; Temp. Lieut. A. H. Frater, D. of Corn. L.I., and to be transfd. to R.F.C., Gen. List; Jan. 14th. Lieut. D. B. Wilson, M.C., R. Scots. (T.F.), and to be sec'd.; Feb. 5th. Lieut. N. J. Selina, Mon. R. (T.F.), and to be sec'd.; Feb. 10th. Temp. Capt. G. R. B. Martin, Trg. Res., and to be transfd. to R.F.C., Gen. List; Capt. A. H. Woodhead, Ches. R., S.R., and to be sec'd.; Lieut. G. Borwick, Bedf. R., S.R., Lieut. G. R. A. Sytret, N. Staff. R., S.R., and to be sec'd.; Lieut. A. A. Vandyk, Lond. R. (T.F.), and to be sec'd.; Feb. 13th. Temp. Lieut. P. J. Whitehead, Gen. List; Feb. 15th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—J. E. Adcock; Dec. 1st, 1917; W. H. Carpenter, Dec. 18th, 1917. W. Nettleship; Jan. 3rd. H. B. George; Jan. 14th. R. A. Silk; Feb. 1st. A. R. Harris, W. E. French, J. F. Hurst, A. R. Philcox; Feb. 5th. J. Milsted; Feb. 8th. F. S. Stokes, H. Stokes, A. H. Hughes; Feb. 10th. G. C. Walsh; Feb. 11th. H. Stocks, A. E. Read, E. L. Reynolds, E. Volk; Feb. 13th. P. H. Hall; Feb. 15th.

Schools of Instruction.—Schools of Military Aeronautics.
Commandant.—Maj. C. P. Rooke, D.S.O., M.C., and to be Temp. Lieut.-Col. whilst so employed; Jan. 14th.
General List.—Maj. M. A. Petre, D.S.O., M.C., from Australian Flying Corps, to be Temp. Maj.; Feb. 1st. To be Temp. 2nd Lieuts. :—Temp. 2nd Lieut. W. F. Steedman, S. Afr. Inf.; Sept. 17th, 1917. Sgt. W. J. Beer, from R.F.C. (since killed); Nov. 25th, 1917. Staff Sgt. F. W. Wheeler, from H.A.C. (T.F.), to be Temp. Lieut. (on prob.); Feb. 27th. The surname of Temp. 2nd Lieut. (on prob.) J. L. Wight is as now described, and not as in the *Gazette* of Oct. 23rd, 1917.

London Gazette Supplement, March 16th.

The following appointments are made:—
Flying Officers.—Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—W. G. Claxton; Sept. 22nd, 1917. R. M. Whitmore; Oct. 13th, 1917. E. S. Coler; Nov. 24th, 1917. K. D. Marshall; Jan. 1st. S. B. Welch; Jan. 30th. A. J. Marsden; Jan. 31st. C. E. Hutcheson, R. Brown, G. W. Hales; Feb. 6th. G. S. Shepherdson; Feb. 8th.
Balloon Officers.—Lieut. P. B. Williams, M.C., Yeo. (T.F.), and to be sec'd.; Lieut. J. C. D. Whelan, Leins. R., S.R., and to be sec'd.; Feb. 13th.
Equipment Officers, 1st Class.—From the 2nd Class, and to retain their temp. rank while so employed:—Lieut. (Temp. Capt.) P. L. Hunting, North'd Fus. (T.F.); Feb. 1st. Lieut. (Temp. Capt.) M. Hodge, S.R.; Feb. 15th. 2nd Class.—From the 3rd Class.—Temp. 2nd Lieut. J. G. Harriott, Gen. List, and to be Temp. Lieut. while so employed; Dec. 22nd, 1917. Lieut. C. F. R. Johnston, R. Sco. Fus. (T.F.); Temp. Lieut. G. Carr, Gen. List; Feb. 1st. 3rd Class.—Lieut. W. W. Smith, M.C., Shrops. L.I., and to be sec'd.; Lieut. G. Oliver, Lond. R. (T.F.), and to be sec'd.; Feb. 13th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—W. C. Downen, T. H. C. Bannister, H. N. Wood; Feb. 13th.

Experimental Officer, 3rd Class.—(Graded as an Equipment Officer, 3rd Class).—2nd Lieut. R. C. S. Jamie, S.R.; Oct. 18th, 1917.

General List.—Temp. 2nd Lieuts. to be Temp. Lieuts.:—E. H. Keir (since killed in action), B. Vandell, R. Q. Thomas, W. Noble, H. R. Poole, (Temp. Lieut.) C. Baines; July 1st, 1917. J. A. Kirker; Oct. 29th, 1917. (Temp. Lieut.) B. F. Wood; Nov. 7th, 1917. K. E. Tanner; Dec. 20th, 1917. C. K. Scott, W. Algie, D.S.O.; Jan. 2nd. F. E. B. Duff; Jan. 6th. F. H. Austin, A. L. Baker, H. J. O. Barnett, (on prob.) R. Turner; Jan. 7th. M. P. Mullery; Jan. 12th. (Temp. Lieut.) C. W. Berry; Jan. 15th. D. Burt; Jan. 25th. A. Koch; Feb. 3rd. N. Glover, B. Pool, H. S. Wilkins; Feb. 4th. T. A. M. S. Lewis, M.C., (Temp. Capt.) R. H. Ayre, M.C., (Temp. Lieut.) H. J. Ball, N. E. Barracough, M.C., R. H. Barratt, H. B. Browne, S. G. Brown, E. T. Carpenter, (Temp. Lieut.) M. L. J. Daly, P. A. de Escotet, H. B. Evans, W. A. J. Gribble, G. A. D. Hancock, J. Harper, (on prob.) J. S. Harrison, L. C. Jarrett, B. G. King, H. F. Lindo, (Temp. Capt.) W. F. Merritt, S. Orchard, (Temp. Capt.) E. R. Pennell, R. O. Purry, A. D. Eiches, R. W. Rose, J. A. Rossi, W. A. Southey, T. J. Stannage, S. J. Stewart, A. D. Taylor, G. G. Thompson, A. A. D. Toplis, G. O. Venn, H. G. Wildbore, M.C., G. T. Wix, C. J. Agelasto; Feb. 5th. L. G. Bacon, R. H. S. Hunter, K. K. Musgraff, M.C. (2nd Lieut.), Dorset R.; E. J. Smart, (Temp. Lieut.) L. G. Stevenson, R. N. Swann; Feb. 8th. (Temp. Lieut.) J. F. Burden, C. H. Marchant, (Temp. Capt.) G. M. Turnbull; Feb. 10th. A. C. Coley, C. H. Dixie, S. Ellis, F. W. Mathias, J. MacGeorge (2nd Lieut., Gord. Highrs.), C. E. Mott, B. Roxburgh-Smith; Feb. 12th. A. S. Dunn, T. H. Gladstone, J. H. Hayward; Feb. 14th. M. Lawson-Williams, E. S. Pfeiffer, C. R. H. Trevor; Feb. 15th. H. J. W. McConnell; Feb. 17th. W. Selwyn; Feb. 19th. G. E. Francis; Feb. 20th. G. W. Charley; Feb. 21st. W. Hardcastle; Feb. 24th. (Temp. Capt.) W. Durrand, J. E. Hunt, H. W. Piper; Feb. 28th.

Temp. 2nd Lieut. St. J. Vincent relinquishes his commission on account of ill-health caused by wounds, and is granted the hon. rank of 2nd Lieut. March 17th.

To be Temp. 2nd Lieuts.:—2nd Class Air Mech. D. J. Fleming, from R.F.C.; Dec. 6th, 1917. 1st Class Air Mech. (actg. Corpl.) W. J. Barker, from R.F.C.; 1st Class Air Mech. H. A. Blaquiere, from R.F.C.; Dec. 13th, 1917. Sgt. A. G. Thornhill, from Glouc. R., Serv. Bn.; Dec. 14th, 1917.

Cadets to be Temp. 2nd Lieuts. (on prob.):—C. E. Goodrum, from R.F.A.; Feb. 11th. G. P. Alexander, P. Anderson, W. W. Ash, H. Allen, F. W. Baillie, W. R. Bannister, A. D. McC. Blair, R. H. Blake, W. A. Booth, W. Brickhill, J. E. Brooks, A. K. McC. Brown, G. A. Brown, R. P. H. Brown, R. H. Bruce, J. M. Brunten, C. Caldwell, F. W. Carr, W. B. Carter, S. F. Case, B. T. Cato, F. Chapman, A. E. C. Churcher, F. Clarke, H. N. Cliffe, W. E. Cockram, J. C. Collins, E. C. Collymore, W. P. Conly, P. M. Cooke, L. T. Corbett, P. F. McCormack, F. Cornwall, W. A. F. Cowgill, C. L. C. Craft, F. Crawford, J. Cumming, E. G. Davies, B. J. Dearlove, C. H. Deeks, T. B. Dick, J. H. L. Dickinson, J. Douglas, H. G. Dowsett, E. W. Dunning, N. A. Dickinson, D. McL. Easton, J. B. Elton, C. G. Fountain, R. H. French, W. H. S. Gee, E. G. Gilder, W. R. Gowlitt, W. C. Griffiths, L. M. Hall, L. D. Hamblin, W. Hassell, J. L. Hodgetts, G. S. Howard, J. R. Hulme, S. D. Hutchinson, E. C. F. D. Jacquier, H. Jones, J. I. C. Jones, L. B. Jordan, J. F. Kinloch, L. B. Lake, C. H. Leland, J. E. P. Levyns, W. Lloyd-Williams, W. E. Laing, L. G. Lucas, J. A. Macdonald, J. A. McAlpine, H. S. McFadden, R. P. McHattie, H. G. McKechnie, T. B. McMillan, R. Mallet, J. W. Mallin, A. C. Marsh, H. L. Martin, L. J. Martyr, F. A. Needham, F. Newton, W. C. Osborn, W. Pease, H. R. C. Piercy, B. T. Piper, R. F. Pull, W. E.

Purdy, L. C. Rattle, A. G. Redstone, C. O. Rigden, S. H. Roberson, L. W. Robins, C. Rockliff, H. Rodgers, C. E. Sainsbury, L. T. W. Sanderson, S. W. Saunders, W. H. Sawyer, W. J. Scaplehorn, L. W. Seaby, R. Sinclair, F. W. Smith, P. C. Stewart, B. Stone, R. A. Stuart, A. A. Labor, W. R. Thornton, A. Tomlin, E. W. Tucker, A. S. Turner, A. Turner, L. E. Tutt, H. J. Uttley, W. Walker, H. Ward, R. D. Weaving, C. F. Whalley, R. J. Whitaker, T. Whittaker, H. White, W. R. G. Williams, W. H. Wilson, J. G. Winks, L. Winwood; March 7th.

Memoranda.—To be Temp. Majors:—While employed as Dep. Asst. Dirs. at the War Office:—2nd Lieut. (Temp. Capt.) E. E. Robb, R.F.C., S.R. 2nd Lieuts. to be Lieuts. while serving with R.F.C.:—A. W. R. Matthews; July 1st, 1917. (Temp. Capt.) W. Millett; Dec. 23rd, 1917. (Temp. Lieut.) H. Jones; Jan. 10th.

Qrmm. and Hon. Lieuts., R.F.C., to be Hon. Captains:—J. Starling (Temp. Lieut.-Col.), A. Leveck (Temp. Maj.), A. H. Measures (Temp. Lieut.-Col.), F. H. Unwin (Temp. Maj.), J. H. Wilford (Temp. Maj.), W. R. Bruce (Temp. Maj.), W. J. Ryan, M.B.E. (Temp. Maj.); March 1st.

Temp. Qrmm. and Hon. Lieut. S. C. Parr (Temp. Maj.), R.F.C., to be Hon. Capt.; Nov. 5th, 1917.

London Gazette Supplement, March 18th.

The appointments are made:—
Flight Commander.—2nd Lieut. R. J. Brownell, S.R., from a Flying Officer, and to be Temp. Capt. whilst so employed:—Feb. 11th.

Flying Officers.—Lieut. R. S. Hall, Yeo. (T.F.), from M.G. Corps, Lieut. E. C. Mogridge, R. Ir. Rif., S.R.; Dec. 18th, 1917. Temp. 2nd Lieut. D. J. Fleming, Gen. List; Dec. 25th, 1917. Lieut. S. E. Toomer, R.G.A., S.R., from a Flying Officer (Ob.), seniority from Feb. 13th, 1917; and Lieut. G. A. M. Webster, S. Lan. R., S.R., from a Flying Officer (Ob.), seniority from March 10th, 1917; Dec. 28th, 1917. Lieut. T. E. Logan, Nova Scotia R., Canadian Exped. Force; Dec. 31st, 1917. Lieut. E. J. McElwee, R. Ir. Rif., S.R.; Jan. 8th. Temp. Lieut. F. Crossley, E. Surr. R., from a Flying Officer (Ob.); Jan. 9th, seniority Dec. 24th, 1916. Lieut. H. E. F. Parkinson, A.S.C. (T.F.), and to be sec'd.; Jan. 14th. Temp. 2nd Lieut. E. F. Maillard, attd. Essex R., and to be transfd. to R.F.C., Gen. List; Jan. 15th. Lieut. H. L. Swinburne, Durh. L.I. (T.F.); Temp. Lieut. J. G. Argles, D. of Corn. L.I., and to be transfd. to R.F.C., Gen. List; Jan. 16th. Capt. H. D. S. O'Brien, M.C., North'n. R., and to be sec'd.; Jan. 17th. Temp. 2nd Lieut. C. G. Capel, attd. Oxf. and Bucks. L.I., and to be transfd. to R.F.C., Gen. List; Jan. 24th. Capt. K. A. Lister-Kaye, W. York R., S.R., and to be sec'd.; Feb. 9th. Lieut. G. A. F. Henderson, Gord. Highrs., S.R., and to be sec'd.; Feb. 11th. Temp. 2nd Lieut. G. Austin, R. Fus., and to be transfd. to R.F.C., Gen. List; Feb. 12th. Temp. Lieut. T. V. Brake, Gen. List, from an Equipment Officer, 3rd Cl.; Feb. 13th. Lieut. B. Stefansson, Manitoba R., Canadian Exped. Force; Feb. 15th. Temp. 2nd Lieut. W. F. Parke, Gen. List; Feb. 18th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—E. C. Robinson; Dec. 18th, 1917. F. E. B. Elsbury, A. H. Galbraith, C. D. Jannery; Jan. 8th. H. M. Fletcher; Jan. 10th. A. C. Bennett; Jan. 16th. E. S. Glasse, J. P. Hamilton; Jan. 17th. H. K. Baron; Jan. 22nd. H. F. D. Lay; Jan. 31st. C. Brooks, A. R. Fairey; Feb. 5th. H. J. Mulroy; Feb. 6th. R. J. Gammon, C. Packham; Feb. 8th. E. H. Westmoreland; Feb. 13th. T. H. Turnbull, A. H. J. How, A. C. R. Tate, L. H. C. Rutter, H. A. Oaks, G. V. Wheatley; Feb. 14th. The appointment of Temp. 2nd Lieut. T. Gran, Gen. List, notified in *Gazette* of Aug. 29th, 1917, is antedated to Jan. 1st, 1917.

Flying Officers (Observers).—2nd Lieut. H. M. Edwardes-Evans, M.C., R. Welsh Fus., and to be sec'd.; Feb. 10th, seniority from Nov. 4th, 1917. Lieut. N. S. Garrett, R.F.A., S.R.; Feb. 14th, seniority from Nov. 20th, 1917. Feb. 12th, seniority from Nov. 27th, 1917:—Temp. 2nd Lieut. A. P. Stoyler, R. Fus., and to be transfd. to R.F.C. Gen. List; 2nd Lieut. B. C. M. Ward, E. Surr. R., S.R., and to be sec'd. Feb. 13th, seniority from Nov. 28th, 1917, and to be transfd. to R.F.C. Gen. List:—Temp. Capt. C. L'Estrange, Labour Corps; Temp. Lieut. A. Priestman, High. L.I., from acting Capt.; Temp. Lieut. A. C. Morris, R. Welsh Fus. (since killed in action); Temp. 2nd Lieut. H. J. Weaver, R. W. Kent R., and to be transfd. to R.F.C. Gen. List; Feb. 12th, seniority from Dec. 11th, 1917. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—L. Cann; Feb. 10th, seniority from Nov. 4th, 1917. R. J. Findlay; Feb. 14th, seniority from Nov. 27th, 1917.

Park Commander.—Temp. Capt. A. R. Earle, Gen. List, from an Equipment Officer, 1st Cl., and to be Temp. Major whilst so employed; Dec. 3rd, 1917.

Equipment Officers, 1st Class.—The rank of 2nd Lieut. (Temp. Capt.) J. P. Angell is as now described, and not as in the *Gazette* of Dec. 17th, 1917. 3rd Class.—Lieut. E. E. Chalmers, R.F.A., S.E.; Lieut. R. Cornthwaite, Dorset R., S.R., and to be sec'd.; Temp. Lieut. G. C. R. Hitchens, Gen. List; Temp. 2nd Lieut. G. E. Lane, R.A., and to be transfd. to R.F.C. Gen. List; Temp. Lieut. S. R. McLaren, E. Surr. R., and to be transfd. to R.F.C. Gen. List; Temp. 2nd Lieut. S. Reynolds, Glouc. R., and to be transfd. to R.F.C. Gen. List; 2nd Lieut. E. M. C. Brown, Bedf. R. (T.F.); Temp. Lieut. C. V. McArthur; Feb. 15th. Temp. 2nd Lieuts. (on prob.) Gen. List, and to be confirmed in their rank:—W. P. F. Bisgood, R. J. Bright, H. Fraser, W. W. Brabner; Feb. 15th.

Schools of Instruction.—School of Technical Training.

Company Commander, graded as an Equipment Officer, 2nd Class.—Lieut. D. C. G. Sharp, R.A., to be sec'd., and to be Temp. Capt. (without the pay or allowances of that rank) whilst so employed; Feb. 6th.

Schools of Special Flying.

Commandant (graded as a Wing Commander).—Capt. (Temp. Brig.-Gen.) R. R. Smith-Barry, S.R., relinquishes his temp. rank, and to be Temp. Lieut.-Col. whilst so employed; Feb. 23rd, seniority from Aug. 23rd, 1917.

General List.—Co. Comdrs. (graded as Equipmt. Offrs., 2nd Cl.), School of Technical Training, to be Temp. Capts. (without the pay or allowances of that rank) whilst so empld.; Temp. Lieut. P. P. C. Penberthy, Gen. List; Lieut. G. J. Dewhurst, K.R. Rif. C., S.R.; Lieut. E. G. Etheridge, Suff. R. (T.F.); Temp. Lieut. L. L. Wight, M.C., E. Surr. R.; Temp. Lieut. J. W. Cairns, Gen. List; Temp. Lieut. G. W. Allen, Gen. List; Lieut. N. Macgregor, Arg. and Suth'd. Highrs. (T.F.); Sept. 24th, 1917. E. Smith, to be Temp. 2nd Lieut. (on prob.) March 1st.

Supplementary to Regular Corps.—2nd Lieuts. to be Lieuts.:—T. W. Costello; Sept. 19th, 1917. J. R. Hembrough; Feb. 4th. 2nd Lieut. A. E. McVittie resigns his commission; March 19th.

General List (R.F.C.).—Cdt. Colin Corden Lloyd to be Temp. 2nd Lieut.; July 30th, 1917 (substituted for *Gazette* notification, Sept. 5th, 1917, page 9238, describing name as Colin Gordon Lloyd); Cdt. G. L. Wilcocks to be Temp. 2nd Lieut.; Aug. 30th, 1917 (substituted for *Gazette* notification, Sept. 18th, 1917, page 9711, incorrectly describing surname as Wilcocks).

Aeronautical Inspection Department.

London Gazette Supplement, March 14th.

A. Downie to be Temp. Hon. Lieut. while employed as Asst. Insp., Aeronautical Inspn. Dept.; Aug. 1st, 1917.

Recruits Wanted for the Wrens.

THERE are vacancies in the Women's Royal Naval Service for cooks, waitresses, shorthand-typists, motor drivers, and ledger clerks.

Applications for officers' posts may be made to the Professional Women's Register, 28, Broadway, Westminster, S.W. 1. Applications for enrolment as section leaders and women should be made to the nearest Employment Exchange.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

British.

War Office, March 5th.

"Italian Front.—Since last report the weather has been dull, with flying only possible on one day, in which we destroyed three hostile machines. Captured airmen admit freely the Allied superiority in the air, and say that great damage has been done to their aerodromes and machines, especially during the past two months. During the past 24 hours the weather has become very bad, with storms and snow in the mountains."

General Headquarters, March 6th.

"After two days of wind and rain, on the afternoon of the 5th inst. the weather cleared slightly. Our aeroplanes observed for the artillery and carried out a few reconnaissances. Bombs were dropped by us on the railway sidings at Mouscron (north-east of Lille) and on targets near the enemy's lines. In air fighting two hostile machines were brought down and one other was driven down out of control. One of our machines is missing. After dark Ingelmunster railway station and a hostile aerodrome north-east of St. Quentin were heavily bombed by our machines, all of which returned."

General Headquarters, March 7th.

"The fine weather on the 6th inst. led to great aerial activity on both sides. Our aeroplanes reconnoitred all parts of the front, and took a great many photographs of the enemy's forward and back areas. Over 400 bombs were dropped on hostile billets and railway sidings, and several thousand rounds were fired from the air from machine-guns at parties of German infantry, hostile batteries in action, and transport on roads. Continuous fighting took place between our scouts and the enemy's machines, which persistently attacked our bombing and artillery machines. Ten German aeroplanes were brought down, and 10 others driven down out of control. Three of our machines are missing."

"After dark, a thick mist developed and prevented much night flying being done. A few bombs, however, were dropped on German aerodromes close to Metz. All our machines returned."

General Headquarters, March 8th.

"Although the weather on the 7th instant was fine, the thick haze interfered with flying. None the less, our aeroplanes dropped on various targets three and a half tons of bombs, one ton of which was dropped on a hostile aerodrome east of St. Quentin. A few fights took place, in which one German machine was brought down. None of our aeroplanes are missing."

"During the night of the 7th-8th instant, our night bombing machines attacked the railway stations of Cambrai and Cusigny (south-east of Cambrai), in addition to billets and active hostile batteries, dropping a total of five tons of bombs. All our machines returned."

War Office, March 8th.

"Palestine Front.—On March 4th successful bombing raids were undertaken against the railway and aerodrome near El Kutrani (80 miles north of Maan). On the 5th, a ton of bombs was dropped on the railway at Kalaat el Hesa (45 miles north of Maan) and the enemy encampments about Shunet Nimrin (on left bank of the Jordan, 10 miles east of Jericho). On the 6th enemy troops and transport on the road Shunet Nimrin-El Ghoraniyeh were engaged with bombs and machine-gun fire."

General Headquarters, March 9th.

"Great aerial activity prevailed on the 8th instant. Work in conjunction with the artillery, reconnaissances, photography, and bombing were carried out incessantly by our aeroplanes. Over 400 bombs were dropped on the enemy's ammunition dumps and sidings at Menin, Busigny, and Guise, east of St. Quentin, in spite of the most determined attacks made by the enemy's scouts against our bombing machines. In air fighting, 12 hostile aeroplanes were brought down and 10 others were driven down out of control. Another hostile machine was shot down by anti-aircraft gunfire. Three of our aeroplanes are missing. After dark, the greater part of the front was enveloped in mist, but in one sector our night-flying machines dropped 24 heavy bombs and 48 lighter bombs on the ammunition dump and railway sidings at Fresnoy, north-east of St. Quentin. All our machines returned."

"At midday on the 9th instant the railway sidings and factories at Mainz (at the junction of the Rivers Rhine and Main), in Germany, were bombed by our aeroplanes with good results. Well over a ton of bombs were dropped, and bursts were seen on and around the barracks, on the railway sidings, and on a factory. A large fire was started. All our machines returned."

General Headquarters, March 10th.

"The aerial activity of the last few days continued on the 9th inst. Several long-distance reconnaissances were successfully completed by our aeroplanes, and many photographs were taken. Observation for artillery was carried out all day. Six hundred bombs were dropped by us on the enemy's ammunition dumps, billets, and aerodromes, and on an important railway centre north-east of St. Quentin. In particular, a most successful attack was carried out at a low height by a large number of our machines against three hostile aerodromes. Bombs were dropped from an average height of 400 ft., and at each of the aerodromes direct hits were obtained on hangars and on machines in the open. While returning from this attack our pilots flew at a height of 100 ft., firing on favourable targets on the ground with their machine-guns and causing casualties and much confusion among the enemy. In one case horse transport on the road was engaged with the result that some of the wagons were upset into the ditch. In another horses in an orchard were stampeded. A company of German infantry was scattered in all directions and a group of officers on horseback dispersed. The fighting in the air was heavy. Ten hostile machines were brought down and 10 others driven down out of control. A German observation balloon was also destroyed. Two of our machines are missing."

"On the 10th inst. Germany was again bombed by our aeroplanes in broad daylight. On this occasion the Daimler Motor Works at Stuttgart were attacked, and over one and a quarter tons of bombs were dropped by us. Several bursts were observed on the railway station, where a stationary train was hit and set on fire. Three bursts were seen on the munition factory south-east of the town, and other bursts on the Daimler works and on buildings round them. Hostile machines made a weak attempt to attack the formation over the objective, but withdrew on being attacked. All our machines returned except one, which evidently had engine trouble and went down under control just before recrossing the lines on the homeward journey."

Admiralty, March 10th.

"A bombing raid was carried out yesterday by naval aircraft on billets and railway sidings at St. Pierre Capelle. Direct hits were observed on three sheds and a fire started. Many bombs were dropped. Bombs were also dropped on a large hostile machine which was seen to have made a forced landing. No direct hits were observed. Several soldiers and motors in the vicinity were subjected to machine-gun fire. On the return journey our formation was attacked, and one enemy machine was brought down in flames. All our machines returned safely."

War Office, March 10th.

"Palestine Front.—Successful bombing operations were undertaken by the R.F.C. near Lubban, on the main Jerusalem-Nablus road, direct hits being observed on troops and transport."

General Headquarters, March 11th.

"On the 10th instant the thick haze rendered work by our aeroplanes in conjunction with the artillery almost impossible. Several reconnaissances, however, were carried out by us, and over 400 bombs were dropped. Amongst other targets, Menin, Roulers, Ledeghem, Cambrai, and Solesmes (east of Cam-

brai) railway stations were bombed by our machines. Three hostile observation balloons were destroyed by our aeroplanes, and five German machines were brought down in air fighting, in addition to seven others driven down out of control. One low-flying hostile machine was shot down by our infantry. Four of our aeroplanes are missing."

Admiralty, March 11th.

"A bombing raid was carried out by naval aircraft on Engel aerodrome and Engel dump, two fires being started. In aerial fighting three enemy aircraft were destroyed and four driven down out of control. All our machines returned safely."

War Office, March 11th.

"Mesopotamia.—During their retreat the Turks were attacked by our aeroplanes with bombs and machine gun fire at heights varying from 2,500 ft. to under 100 ft., and heavy casualties were inflicted on them."

"Palestine Front.—Throughout March 10th our aeroplanes co-operated by engaging enemy troops and transport with machine-gun fire and bombs at various points on the Nablus road."

General Headquarters, March 12th.

"Another fine day on the 11th inst. enabled our aeroplanes to continue their activity. Visibility, however, was again poor and prevented work with the artillery from achieving much success. Many photographs were taken by us, and several reconnaissances were carried out well to the east of the line. Over 500 bombs were dropped by our aeroplanes, the chief target being the large sidings and ammunition depôts at Aulnoye (south-east of Mauberge) and ammunition depôts south of Valenciennes, south-east of Cambrai, and south of Douai. The enemy's aeroplanes were also active, and attacked our bombing machines. As the result of air fighting ten hostile machines were brought down and seven others were driven down out of control. In addition a German observation balloon was attacked, and brought down in flames. Two of our machines are missing."

"After dark most of our night-bombing machines were again prevented from leaving the ground by mist, but on the southern portion of our front, where the night was clear, 200 bombs were dropped by us on a hostile ammunition dump and railway sidings north-east of St. Quentin. All our machines returned. The enemy also dropped a few bombs during the night, but lost a four-seater machine, which landed in our lines. The occupants were taken prisoners."

"On the 12th inst. another daylight raid into Germany, making the third within the last four days, was carried out by our aeroplanes. On this occasion the factories and station and the barracks at Coblenz (at the junction of the Rhine and the Moselle) were attacked. Over a ton of bombs were dropped, and bursts were seen on all the objectives, causing two fires. A hit obtained upon a building in the south-west corner of the town created a very large explosion. A few enemy machines were encountered, but all our machines returned safely."

War Office, March 12th.

"Palestine Front.—During the night of March 10th and the following day a further advance was made by our troops astride the Jerusalem-Nablus road."

"Unfavourable weather prevented co-operation by our air service."

General Headquarters, March 13th.

"During the night of the 11th-12th inst., in addition to the raids reported in last night's *communiqué*, over 3 tons of bombs were dropped by us on Bruges docks. All our machines returned. On the 12th inst. a distinct improvement in visibility enabled more work to be done by our aeroplanes in conjunction with the artillery than has been possible during the last few days. Many reconnaissances also were carried out and photographs were taken. Bombing was continued with even greater vigour than on previous days. Over 13½ tons of bombs were dropped by us on various targets, which included the railway sidings at Mons and at Bavai (midway between Valenciennes and Mauberge), on large ammunition depôts north-east of St. Quentin, and south of Douai, and on hostile billets east of Lens. In the course of the fighting, which was continuous throughout the day, 14 German machines were brought down, and eight others were driven down out of control. One hostile observation balloon was also destroyed. Six of our aeroplanes are missing."

"During the night of the 12th-13th inst., 7 tons of bombs were dropped on the enemy's billets between Lille and Cambrai. All our machines returned. On the afternoon of the 13th inst. our squadrons attacked the munition works and barracks at Freiburg, in Germany. All our machines reached their objectives, and nearly a ton of bombs was dropped. Further details of the raid have not yet been received."

Admiralty, March 13th.

"On the night of March 11th a bombing raid was carried out by naval aircraft on Bruges Docks. Over 3 tons of bombs were dropped on the objective, but, owing to poor visibility, results could not be observed. Yesterday (March 12th) a raid was made on billets and sidings at St. Pierre Capelle. Many bombs were dropped. Bursts were observed on the objectives, and a large fire started. During the usual offensive patrols enemy trenches were attacked by machine gun fire, and two enemy machines were shot down in flames, one crashing into the sea. A hostile kite balloon which had broken adrift was also shot down. One of our machines is missing."

War Office, March 13th.

"Palestine Front.—Our air service co-operated and dispersed enemy troops with bombs and machine-gun fire."

Admiralty, March 14th.

"On March 12th two British seaplanes encountered and attacked five enemy aircraft in the southern part of the North Sea. An engagement took place which lasted for 30 minutes. One enemy two-seater was shot down and destroyed, the observer of a second machine was killed, and a third seaplane was driven down on the water. The engagement terminated when the British seaplanes had expended all their ammunition. Both machines returned safely."

General Headquarters, March 14th.

"On the 14th inst. our aeroplanes were again able to accomplish a full day's work in the air, and reconnaissance, bombing, photographic, and artillery work was continued as on previous days. Seven hundred bombs were dropped by us on the enemy's rest billets and ammunition dumps and on the railway sidings at Courtrai and Denain. An aerodrome occupied by some of the enemy's night-flying squadrons was also attacked. Fighting was most severe, encounters taking place between large formations of our own and the enemy's aeroplanes. Nineteen hostile machines were brought down, and five others driven down out of control. Five of our machines are missing."

"During the recent spell of fine weather the Australian and Naval Squadrons attached to the Royal Flying Corps have again proved of the greatest value."

"The following further information has been received regarding the raid on the German town of Freiburg reported yesterday. The bombs dropped by us were seen to burst on the railway station and round the power station. Just after our pilots had released their bombs our formation was attacked by a large number of hostile machines. A fierce fight ensued, which lasted until all the enemy's machines were forced to withdraw. Three of our machines have not returned."

War Office, March 15th.

"Italian Front.—Since the last report four hostile aeroplanes have been destroyed, and one driven down out of control; in addition, two enemy observation balloons have been burnt. One of our machines is missing."

General Headquarters, March 15th.

"On the morning of the 14th inst. rain prevented flying, but in the afternoon the weather cleared. Bombs were dropped by our aeroplanes on the enemy's rest billets, on a railhead near Lille, and on an aerodrome 20 miles north-east of St. Quentin, used by night-flying aeroplanes. Another hostile aerodrome, due east of St. Quentin, was attacked by a large number of our machines. Bombs were dropped from a low height on to the hangars, one of which was set on fire, while two others were badly damaged. On the homeward flight horse transport, troops, and motor-cars were fired on with machine-guns. None of our machines is missing."

General Headquarters, March 16th.

"On the 15th inst. our aeroplanes were again active. Reconnaissance and artillery work, photography, and bombing were continued, and a great deal of fighting took place east of the lines on the whole front. Over 12 tons of bombs were dropped by us on hostile rest billets, ammunition depôts, and aerodromes. A successful raid was carried out upon the important railway sidings at Hirson, where hits were obtained on the railway. Twelve hostile machines were brought down by our aeroplanes and seven others were driven down out of control. None of our machines is missing."

"After dark the aerial activity was continued by our night-flying machines until early morning. Over 8½ tons of bombs were dropped on the enemy's rest billets. All our machines returned."

"On the 16th inst. further military objectives in Germany were attacked by our aeroplanes. Fourteen heavy and 10 lighter bombs were dropped on the barracks, munition factories, and railway station of Zweibrücken. Bursts were seen on the barracks and all round the railway station. The formation was attacked by hostile scouts and engaged by anti-aircraft guns, but all machines returned."

General Headquarters, March 17th.

"On the 16th inst. there was again great activity in the air. The enemy's billets, which had been bombed continually for the last 24 hours, were again heavily attacked by our aeroplanes. A total of 13 tons of bombs were dropped, our objectives including two hostile aerodromes and three large ammunition dumps, in addition to billets. At one of the aerodromes a hangar was completely burnt, and a Gotha machine which was in the act of rising from the ground, was seen to crash. The fighting was intense during the morning, but became slightly less vigorous during the afternoon. Sixteen hostile machines were brought down and seven others were driven down out of control. Six of our machines are missing."

"After dark the enemy's rest billets were again attacked by our squadrons, bombs being dropped until just after midnight, when a thick mist developed. All our machines returned."

"On the 17th inst. our aeroplanes once more raided Germany, attacking the barracks and railway station at Kaiserslautern with good results. Direct hits were observed on the railway station and a large fire was caused. The formation was attacked by a large number of hostile machines, which were driven off. All our machines returned."

General Headquarters, March 18th.

"On the 17th instant good visibility enabled us to carry out even more work in the air than on previous days. Much work was done by our artillery with observation from the air, and photography and reconnaissances by our aeroplanes were continued. The railway sidings at Somain, hostile rest billets on all parts of the front, and three of the enemy's aerodromes were all heavily bombed by us. A total of 10½ tons of bombs were dropped on these various targets. Over one of the aerodromes attacked a fierce encounter took place, as the result of which three hostile aeroplanes were brought down. Our own machines suffered no losses."

"During the day, 18 German machines were brought down and eight were driven down out of control. A hostile observation balloon was also destroyed by us. Four of our machines are missing."

"In the early part of the night, before the mist set in, our night-flying squadrons dropped five tons of bombs on two hostile aerodromes (one of which is occupied by large bombing machines), also on a big ammunition dump north-east of St. Quentin, and on hostile billets in the neighbourhood of Douai and Menin. All our machines returned."

Admiralty, March 18th.

"During offensive patrols carried out by R.N.A.S. machines from Dunkirk from March 14th to 17th, five enemy machines were destroyed and five shot down out of control. In addition, in one engagement two enemy observers were seen to have been killed. All our machines returned safely."

French.

Paris, March 6th.

"During the 5th, three Germans were brought down by our pilots and two by the fire of our anti-aircraft guns."

Paris, March 7th.

"German airmen bombarded during the night the region to the north of Nancy. There were no victims."

"Yesterday four German aeroplanes were brought down by our pilots."

"Our bombing machines dropped 12,000 kilos of explosives on railway stations and ammunition dumps in the enemy zone."

Paris, March 10th.

"A German aeroplane was brought down by our anti-aircraft guns on March 7th. During March 8th two German aeroplanes were brought down by our pilots. In the course of Saturday two German aeroplanes were brought down by our pilots and 10 others seriously damaged fell in their own lines. It is confirmed that five German aeroplanes were brought down on Wednesday and Friday. Our bombing aeroplanes made several flights; 14,000 kilogrammes of projectiles were dropped on railway stations, cantonments, and aviation grounds in the enemy zone. Several fires were observed."

Paris, March 11th.

"Yesterday five German aeroplanes were brought down or gravely damaged in the course of aerial fights. Our bombing squadrons dropped 10,000 kilogrammes (nearly 10 tons of projectiles) on various enemy stations and establishments in the region of the north and east."

Paris, March 12th.

"A German machine was brought down during the night of March 11th-12th by the fire of our special guns. The machine fell to the north of Soissons. The three occupants, of whom two were officers, were taken prisoners. During the day of the 11th three German machines were brought down by our pilots and a fourth was badly damaged. Last night three other enemy bombarding aeroplanes were brought down by the fire of our anti-aircraft guns."

"Salonica.—The Allied Air Services carried out numerous bombardments of the enemy's establishments in the region of Rupel and north of Monastir."

Paris, March 13th.

"Yesterday a German machine was brought down and three others fell in their own lines in a badly damaged condition. On the 11th Sergt.-Major Garraud accounted for his 10th enemy aeroplane."

Paris, March 14th.

"During the day three German machines were brought down by our pilots. It is confirmed that on the 9th Sub-Lieutenant Madon brought down two German aeroplanes. Our bombarding aeroplanes carried out several raids. Explosive bombs weighing 9,800 kilos. were dropped on railway stations and aerodromes in the enemy zone."

"Salonica.—There was artillery activity on the right of the Vardar and to the north-west of Monastir. Numerous bombardments were carried out by Allied airmen on the Sere-Drama line, on enemy dumps in the Vardar Valley, and on the railway station of Beranci, north of Monastir."

Paris, March 15th.

5,640 kilogrammes of projectiles were dropped last night on a number of railway stations, factories, and cantonments in the enemy zone."

Paris, March 17th.

"During the daytime on March 15th a German aeroplane was brought down by our pilots, and four others were seriously damaged. Our bombing machine dropped 7,000 kilogrammes of projectiles on enemy military establishments and behind the front."

"In the course of the 16th, our pilots destroyed two German aeroplanes. Four other enemy machines fell in their lines as the result of fighting. It is confirmed that four fresh German machines were brought down on Wednesday and Friday."

Paris, March 18th.

"In the course of yesterday three German aeroplanes were destroyed and six others seriously damaged by our pilots. Besides these, a German captive balloon was set on fire by one of our airmen. It is confirmed that two other German machines were brought down on March 15th and 16th. Our bombers dropped 6,000 kilogrammes of explosives in the course of the day and during the night of the 16th, and 5,000 kilogrammes on the 17th on enemy establishments, cantonments, and railway stations in the enemy zone."

"Salonica.—Allied airmen dropped more than 1,000 kilogrammes of explosives on the enemy's establishments in the Struma and Vardar valleys and towards Resna. Important results were observed."

Italian.

Rome, March 6th.

"In the course of the day our aircraft bombarded the enemy aviation ground of Motta di Livenza and a column of troops caught marching in the neighbourhood of Oderzo. Over Conegliano a British airman shot down a hostile machine."

Rome, March 8th.

"British batteries and airmen brought down a hostile aircraft and set fire to two captive balloons. Navy seaplanes dropped two tons of bombs over the enemy hutments and encampments below Grisolera (Lower Piave)."

Rome, March 9th.

"Our aircraft, notwithstanding adverse atmospheric conditions, bombarded a big carriage park of the enemy north-east of Oderzo."

Rome, March 11th.

"On river's bank opposite Zenson, our machine guns fired upon hostile parties; our batteries, efficaciously helped by aircraft observation, caused the burning of an enemy's battery, hit enemy working parties east of Salettuol, dispersed and sank rafts and boats opposite Fagare. During the day our aeroplanes bombarded enemy's aviation grounds; other camps were bombed in the night by five airships. In all seven tons of bombs were dropped, and all our aircraft returned unscathed to their bases, notwithstanding the violent fire of the enemy. On the left side of the Piave British airmen brought down two hostile machines."

Rome, March 12th.

"Five enemy aeroplanes were shot down, one by our own airmen above Mt. Erio, three by British airmen to the west of Mt. Lisser, and one by the French anti-aircraft batteries near Pederobba. Our airships renewed last night the bombardment of the aviation grounds of the enemy."

Rome, March 13th.

"On the plains aerial activity was remarkable on the fighting lines and on the immediate rear lines. During the day the seaplanes of the Royal Navy dropped bombs on enemy stores, and during the night the aviation grounds of the enemy were bombed by our airships. An enemy aeroplane, shot down by one of our airmen, fell on the left side of the Piave."

Rome, March 18th.

"On the 17th [?16th] inst. one of our airmen brought down an enemy machine on the right side of the Piave. Yesterday four more hostile aeroplanes were shot down by our airmen respectively to the east of Mt. Grappa, in the Seren Valley, south of the Col d'Astiago, and east of Conco."

"Last night one of the airships of the Royal Navy dropped bombs on an aviation ground of the enemy on the Livenza."

Belgian.

Havre, March 17th.

"Adjudant de Meulemeester this morning brought down his eighth machine above Dixmude. There were frequent aerial fights during the week, in which one German aeroplane was shot down and several others forced to land within their own lines."

German.

Berlin, March 7th.

"Nineteen enemy aeroplanes and two captive balloons were brought down yesterday in aerial fighting. Captain Ritter von Tutschek obtained his 26th victory in the air."

"A great many French inhabitants have been killed by bombs dropped by English airmen on the hospital in Tourcoing."

Berlin, March 10th.

"During the last two days 28 enemy aeroplanes and one captive balloon were shot down."

"The Bülke chasing échelon brought down its 200th opponent."

Berlin, March 11th.

"Capt. Ritter von Tutschek and Lieut. Wüsthoff achieved their 27th and First Lieut. Bethge his 20th aerial victories."

Berlin, March 12th.

"Lieutenant Baron von Richthofen achieved his 27th aerial victory."

Berlin, March 13th.

"Strong reconnoitring activity in the air led to violent fighting. We shot down yesterday 19 enemy aeroplanes and two captive balloons. Cavalry Captain Baron von Richthofen achieved his 64th and Lieutenant Baron von Richthofen his 28th and 29th aerial victories."

Berlin, March 14th.

"Yesterday 17 enemy aeroplanes and three captive balloons were brought down during aerial engagements and by fire from the earth."

"Of an enemy squadron flying towards Freiburg three machines were brought down on the front."

"Cavalry Captain Baron von Richthofen achieved his 65th aerial victory."

Berlin, March 17th.

"Seventeen enemy aeroplanes and two captive balloons were shot down yesterday (Saturday) as the result of aerial encounters and by fire from the ground."

Berlin, March 18th.

"On the whole front there was very lively aerial activity. French airmen dropped bombs on the hospital establishments at Le Thour, which were clearly recognisable as such. Yesterday we shot down 22 enemy aeroplanes and two captive balloons. Lieut. Kroll achieved his 21st aerial victory."

"In February the losses of the enemy aerial forces on the German front amounted to 18 captive balloons and 138 aeroplanes; 59 of these behind our lines. The remainder were seen to fall beyond the enemy positions. In aerial fights we lost 61 aeroplanes and three captive balloons."

Turkish.

Constantinople, March 8th.

"There was lively aerial activity."

Constantinople, March 10th.

"Throughout this day of battle (March 9th) aerial activity was likewise intense."

Bulgarian.

Sofia, March 15th.

"South of the Belasitza mountains our artillery brought down two enemy aeroplanes, one of which fell behind our lines north of Lake Butkovo. The pilot, an Englishman, was taken prisoner."

AVIATION IN PARLIAMENT.

Aerodrome Construction.

MR. HEMMERDE, on March 6th, in the House of Commons, asked the Chancellor of the Exchequer whether it is the practice of His Majesty's Government to pay contractors for the construction of aerodromes and other military works on the principle of a percentage of their expenditure; whether he has received a resolution from the Farmers' Federation protesting that such a system is conducive to extravagance and enables the contractors to offer inducements to agricultural labourers and others to leave their proper employment to the detriment of industries of urgent national importance; and whether a system of payment more consistent with national economy will be devised and adopted?

MR. BONAR LAW: I have received the resolution from the Farmers' Federation and am in communication with the Air Ministry on the subject.

Air Service Medical Department.

MAJOR DAVIES asked the Under-Secretary of State to the Air Minister whether an Advisory Committee was created to determine the constitution and powers of a separate medical service in connection with the Air Force; and whether he is prepared to lay this Report upon the Table of the House?

THE PARLIAMENTARY SECRETARY to the Air Ministry (Major Baird): As I have already stated in the House, it has not been found practicable to adopt in their entirety, at any rate for the present, the proposals of the Committee. I do not think it is desirable to publish the Report, which consists largely of administrative recommendations contingent on the adoption of the main proposals.

Practising Forced Landings.

MR. ROWLANDS, on March 11th, asked the Under-Secretary of State to the Air Ministry whether he is aware that complaint has been made by Messrs. Basset and Sullivan, working farmers and market gardeners at Dartford, to the commanding officer at Joyce Green, of the damage done by the landing of an aeroplane on their land, when considerable damage was done to their crops and fences, also by the crowd of people attracted to the field; whether he is aware that there was no legitimate cause why the landing should have been made there, and if he can give any explanation in connection with the occurrence, as the damage to the crops prevents the farmers carrying out the wishes of the Food Controller; and if he will also see that instructions are given to the pilots to avoid unnecessary damage?

THE UNDER-SECRETARY of State to the Air Ministry (Major Baird): I am obliged to the hon. member for directing my attention to this occurrence, which was due to a regrettable misunderstanding. Practising forced landings forms part of a pilot's training, but the importance of avoiding landings of aircraft in circumstances likely to involve damage to crops is fully appreciated. Instructions on this point have been issued, and are being reiterated.

MR. ROWLANDS: May I ask the hon. gentleman whether he is aware that this particular machine was carrying a passenger and that the passenger alighted, walked across the field, and got over a wall into the house?

MAJOR BAIRD: I understand that the damage in this case was not done by the landing of the machine, but by the people who always congregate when a machine lands. Every effort is being made to stop it.

MR. ROWLANDS: But may I ask the hon. gentleman is he aware that the damage was caused by the passenger alighting from the machine and getting over the wall into the neighbouring house?

Aerodrome Buildings, Loch Doone.

MR. RAMSAY MACDONALD asked the Under-Secretary of State for War whether extensive buildings in the Loch Doone district, originally intended for aerodromes and for the use of the Air Service, are being demolished because they are found to be useless; if so, why these buildings could not have been used for hospitals or other similar purposes; and whether he could state the amount of public money wasted upon them?

MAJOR BAIRD: So far as possible the huts and buildings not now required at Loch Doone are being removed to other places where they are urgently needed. It is not yet possible to ascertain the net expenditure incurred on buildings at Loch Doone.

Night Maroon Warnings.

MR. GILBERT, on March 13th, asked the Secretary of State for the Home Department whether he is aware that there is in many parts of London a desire that the maroon warnings of air raids shall be given in future all night; is he prepared to authorise this in future; and can he make any statement that will satisfy the people who desire the extension of the hours of the existing warnings?

THE SECRETARY of State for the Home Department (Sir George Cave): I am aware that considerable interest is taken in this matter, and in view of representations which have been received and of the experience gained during recent air raids, the question has been reconsidered.

IT IS believed that the meaning of the maroons is now well understood, and that they are generally appreciated as an effective warning of a threatened air raid; and I am informed that owing to the complete arrangements made by Home Forces the risk of a false alarm is now reduced to a minimum. I am further informed that there is still some uneasiness lest if an air raid should commence after midnight the warning to take cover should not reach the back streets, and that the promise of a sound warning at all hours would produce a feeling of greater confidence. In these circumstances, and notwithstanding some strong arguments to the contrary, the Commissioner of Police proposes to give the maroon warning at all hours of the day or night when an air raid is impending.

I may perhaps be allowed to add that in no case should the maroon warning be treated as an invitation to the householder to leave his house, the safest course in all cases being to remain at home and to keep the children there.

MR. GILBERT: Arising out of that answer, will the right hon. gentleman undertake to have public notices issued at once stating his new decision?

MR. LOUGH: Will he say whether he has considered the desirability of using a siren at night? It is less alarming.

SIR G. CAVE: We have considered that very carefully, and have discarded the suggestion. I think my announcement will be fairly widely known, but I will consider whether some further notice should be given.

MR. ANDERSON: Will the Home Secretary consider the issuing of a very special notice to people about not leaving their houses. Taking children out of their warm beds into the cold streets has been responsible for a great deal of illness and death, and could not something more urgent be issued?

SIR G. CAVE: There is a notice to that effect already issued, but I will see whether something more striking cannot be issued.

Agricultural Labourers and Aerodrome Construction.

MR. G. TERRELL asked the Under-Secretary of State for War whether he has received a resolution passed by the Malmesbury rural and urban local tribunals on March 4th protesting against the Government or Government contractors taking men off the land for the erection of aerodromes and other Government works, such action being detrimental to agriculture and the production of food, and also rendering the work of the tribunals and recruiting authorities most difficult; and, if so, what action he proposes to take in regard to the matter?

MAJOR BAIRD: I am informed that the resolution referred to by my hon. friend has not been received at the War Office or the Air Ministry, but the difficulties referred to in the question have been receiving special consideration by the Departments concerned, and instructions have been issued that all contractors shall engage labour only through employment exchanges, and that these shall not send forward for work on aerodrome construction any applicant whose last employer was a farmer, or who is known to be an agricultural labourer.

Air Force Flight Officers.

MR. JOYNSON-HICKS asked the Under-Secretary of State to the Air Ministry what percentage of flight officers in the Air Force is at the present time supplied by the Dominions and the Mother Country, respectively?

MAJOR BAIRD: These figures are not at the present time required for administrative purposes, and could only be ascertained by delaying other work of great urgency. I trust, therefore, that the hon. member will not press for them.

SIDE-WINDS.

To leave himself free for other work in connection with aircraft, and aircraft parts, &c., Mr. Bernard Isaac has resigned his connection with the Aircraft Supplies Co., Ltd. In this connection the West End offices of this company are now removed to the headquarters at 125, Long Acre, W.C.2, to

which address all communications for the Aircraft Supplies Co., Ltd., should be sent in future. Mr. Isaac will continue at the helm of the Procter-Isaac Aviation Co. at 166, Piccadilly, W.1, which is doing so much testing and experimental flying.



Women's Work in the War.—Covering aeroplane wings and planes with fabric in one of the workshops of the Humber Motor Co. In normal times this department was devoted to the upholstering of Humber car bodies.

A LITTLE time ago reference was made in these notes to the correspondence courses—known as the Thorough Classes—conducted by Mr. S. T. G. Andrews, at 80, Shakespeare Crescent, E.12. We have now seen a copy of a new course of lessons on Elementary Aeronautical Design, which should be especially useful for draughtsmen and others who are taking up the subject. The course consists of twelve lessons, and after a brief historical *résumé* takes the student through the process of designing an aeroplane. The lessons are written very lucidly, and whenever necessary diagrams are given which greatly assist in following the text. Mr. Andrews will be glad to send full particulars of the lessons to any readers interested.

FROM Messrs. Naylor Brothers (London), Ltd., of Southall, Middlesex, comes a useful little brochure setting forth the firm's aero specialities. These include wood filler, shellac spirit varnishes, copal varnishes, dope resisting paints and varnishes, paints and enamels, gold size, japans, &c. The booklet also outlines an airscrew finishing scheme which can be had printed on a large card for hanging in paint shops.

VENTILATION and light are two considerations which should be dealt with generously when designing new workshops, and it is in this connection that Messrs. Williams and Williams, of Reliance Works, Chester, can be of assistance to those who are undertaking extensions. This firm have made a speciality of metal casements and the adoption of some of their fittings is of advantage from the point of view of rapid construction. We understand, too, that the firm are fortunate in being able to supply such metal work rapidly.

BEHIND the announcement that two members of the board of the Fairby Construction Co., Ltd., have resigned their directorships, are certain circumstances which denote that Mr. G. H. Humphrey has resumed his association with the management of the firm after an interval of twelve months, and that the enterprising policy of this building company will be resumed with every prospect of even greater success than marked its earlier operations. Mr. R. C. Wood is returning to the firm, and with Mr. G. Harrison is joining Mr. Humphrey and Major Walker on the board. The company have recently taken larger offices at 317, High Holborn, W.1, telephone 1875 Holborn (2 lines). The telegraphic address still remains as easily memorable as before, "Bizzibild, London."

LEGAL INTELLIGENCE.

Air Board Contracts.

AT Bow street Police-court on March 14th, before Mr. Garrett, Hugh John Williams, 27, of Addison Gardens, Shepherd's Bush, was charged, on remand, under the Prevention of Corruption Act, with having, as a clerk in the employment of the Air Board, attempted to obtain from F. J. Newman (acting on behalf of Messrs. A. Lloyd & Sons, Ltd., of Deptford) gifts of money as an inducement and reward for doing and forbearing to do certain acts in relation to a tender by Lloyd & Sons for the supply of packing-cases for Michelin flares and aeroplane propellers to the Air Board.

Inspector Burton said that defendant went to France as an officer in September, 1914, and was wounded the following year. He was transferred to the Navy, and was finally discharged, his military, naval, and civil records being good.

The prisoner pleaded not guilty, and reserved his defence, but added that what he had done had been for what he thought the good of the service—with a view to detecting a system of bribery which he believed to exist.

Mr. Garrett committed him for trial, and agreed to accept bail in two sureties of £250 each.

IMPORTS AND EXPORTS, 1917-1918.

AEROPLANES, airships, balloons, and parts thereof (not shown separately before 1910). For 1910 and 1911 figures see "FLIGHT" for January 25th, 1912; for 1912 and 1913, see "FLIGHT" for January 17th, 1914; for 1914, see "FLIGHT" for January 15th, 1915; for 1915, see "FLIGHT" for January 13th, 1916; for 1916, see "FLIGHT" for January 11th, 1917; and for 1917, see "FLIGHT" for January 24th, 1918.

	Imports.		Exports.		Re-Exportation.	
	1917.	1918.	1917.	1918.	1917.	1918.
January...	10,842	49,402	67,033	24,765	—	—
February	9,479	51,941	26,512	13,545	6	—
	20,321	101,343	93,545	38,310	6	—

COMPANY MATTERS.

Rolls-Royce, Ltd.

THE report of directors states that it is again this year impracticable to submit at this stage the usual accounts; but the directors are satisfied, after anticipating that large depreciations will have to be made in respect of capital expenditure, that the profits for the year ended October 31st, 1917, warrant the payment of a dividend of 10 per cent. The company has in past years retained and carried to reserves or carried forward the major part of the profits, only distributing a portion in dividends. The amounts so retained aggregate (notwithstanding the decreased profits during the three "war" years 1914, 1915, and 1916) a sum exceeding the issued capital. The directors propose that a part of this retained profit shall be distributed by the issue of fully paid shares. Accordingly, the directors recommend that the presentation of the balance sheet stand in abeyance, that a dividend be paid of 10 per cent. (less income tax), that the nominal capital of the company be increased, and that (subject to the approval of the Treasury) a bonus fully-paid £1 share be issued to each shareholder for each share held by him.

The company's energies continue to be entirely occupied in the production of munitions of war.

D. Napier and Son, Ltd.

THE directors' report and balance sheet as at September 30th, 1917, states that the profit, after allowing for depreciation of premises, plant and tools, amounted to £129,499 5s. 7d., to which is added the balance brought forward from last account, £9,557 6s. 7d.; total, £139,056 12s. 2d. Deduct dividend for the year on preference shares to June 30th, 1917, and interest on debenture stock to September 30th, 1917, £28,000; income tax, £6,944 13s.; directors and trustees' fees, £605; commissions to managers, £3,518 4s.; dividend of 10 per cent. (less income tax) on the ordinary shares paid January 4th, 1918, £35,000; total, £74,067 17s., leaving a balance of £64,988 15s. 2d., which the directors recommend shall be appropriated as follows:—Pay a bonus of 1s. 6d. per share on the ordinary shares (free of income tax) amounting to £26,250; place to general reserve a further £20,000 (making £60,000); total, £46,250; and carry forward to next year a balance of £18,738 15s. 2d.

During the year ended September 30th last, its output exceeded that of any previous year.

Aeronautical Patents Published.

Applied for in 1917.

The numbers in brackets are those under which the Specifications will be printed and abridged, &c.

Published March 21st, 1918.

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2,390. S. V. DE BOLOTOFF. Means to receive strut-ends in aeroplanes. (113,467.)

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